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THE JOURNAL of The Maine Medical Association

VOLUME 58 JANUARY, 1967 NUMBER 1

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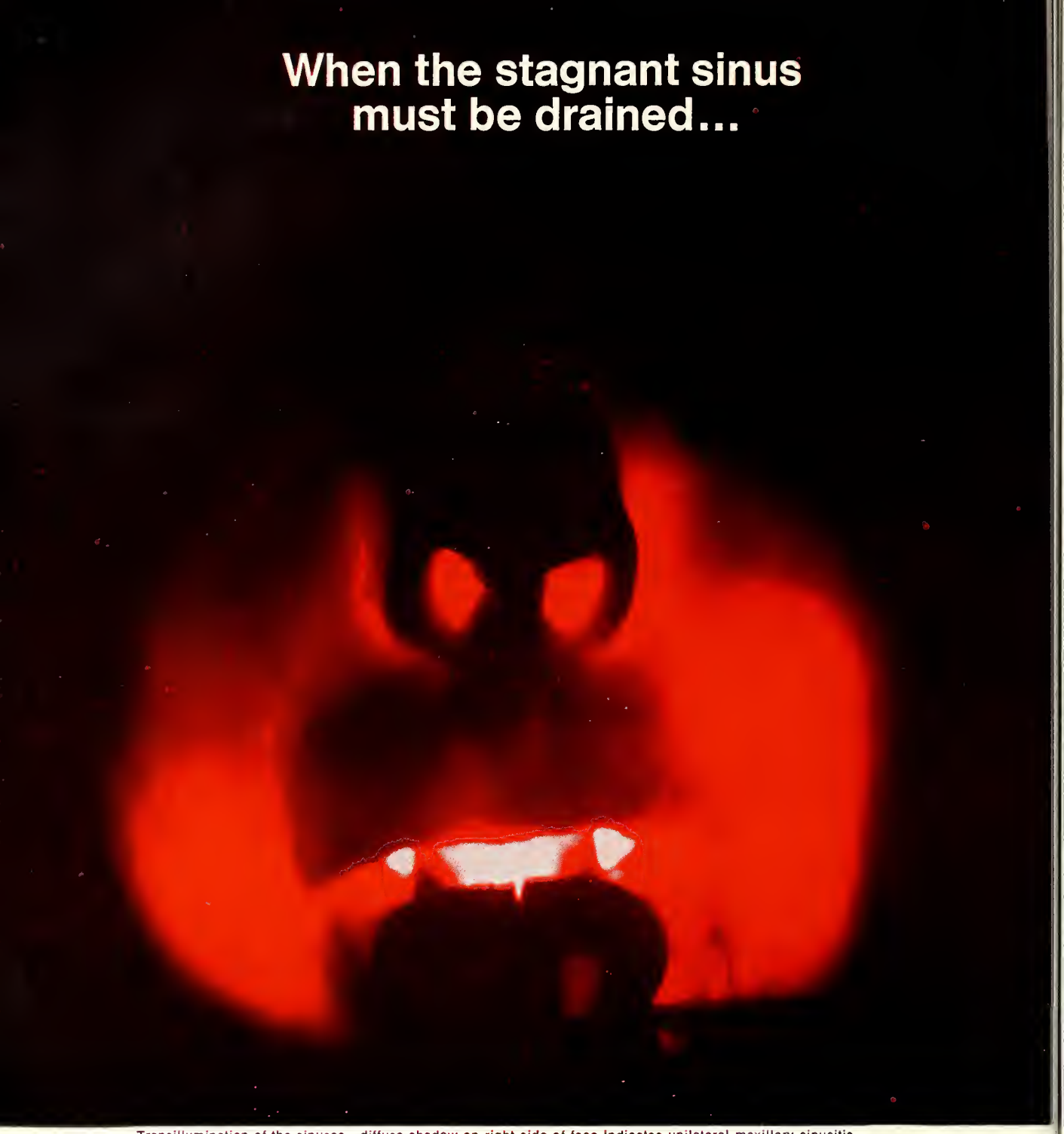
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References: (1) Siver, R. H.: CMD, *21*:109, September 1954. (2) Frykman, H. H.: Minn. Med., *38*:19-27, January 1955. (3) McGivney, J.: Tex. State Jour. Med., *51*:16-18, January 1955. (4) Quehl, T. M.: Jour. of Florida Acad. Gen. Prac., *15*:15-16, October 1965. (5) Weekes, D. J.: N.Y. State Jour. Med., *58*:2672-2673, August 1958. (6) Weekes, D. J.: EENT Digest, *25*:47-59, December 1963. (7) Abbott, P. L.: Jour. Oral Surg., Anes., & Hosp. Dental Serv., 310-312, July 1961. (8) Rapoport, L. and Levine, W. I.: Oral Surg., Oral Med. & Oral Path., *20*:591-593, November 1965.

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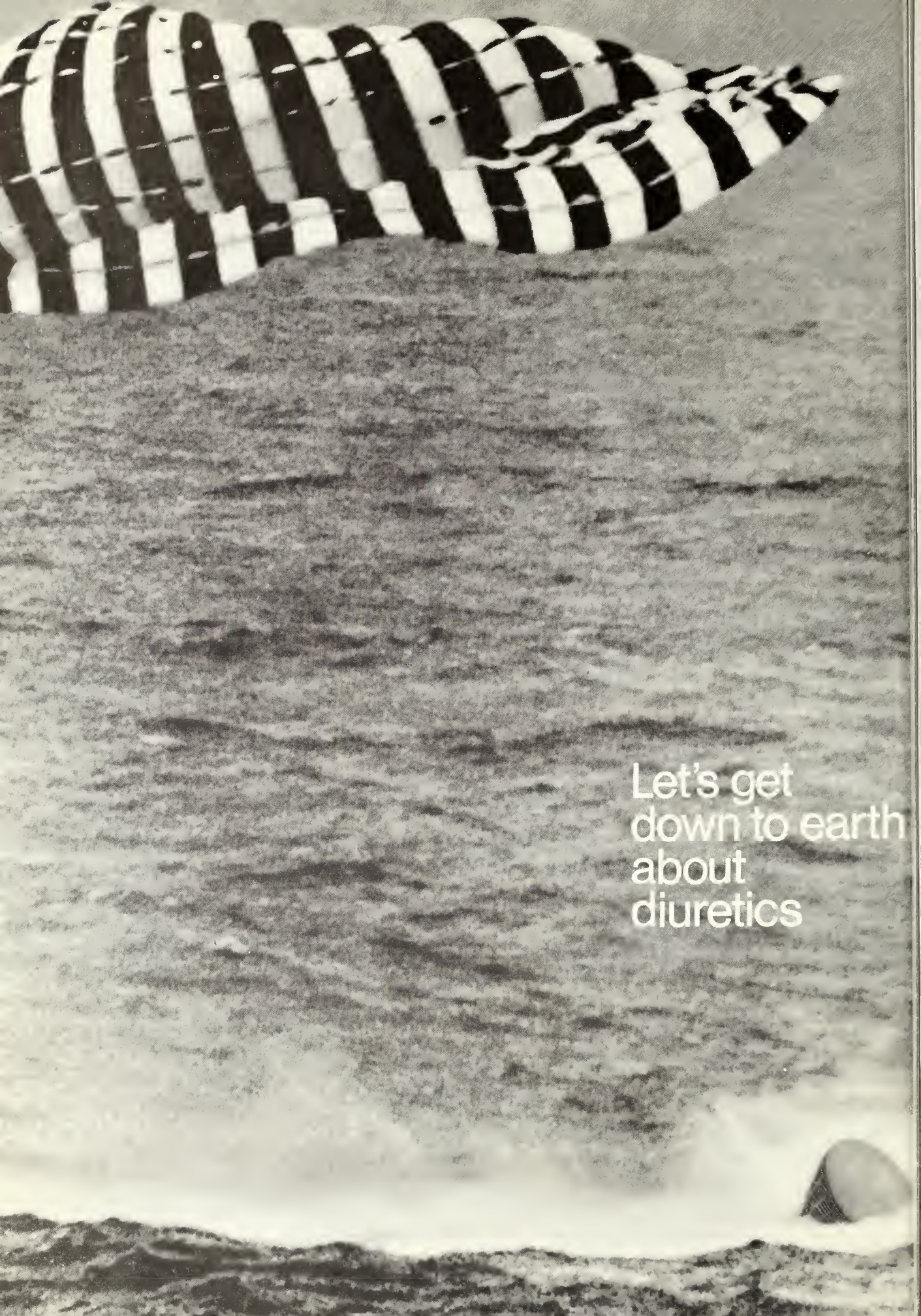
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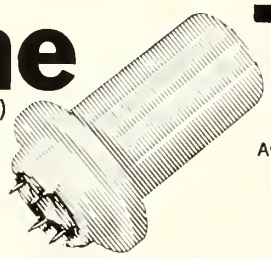
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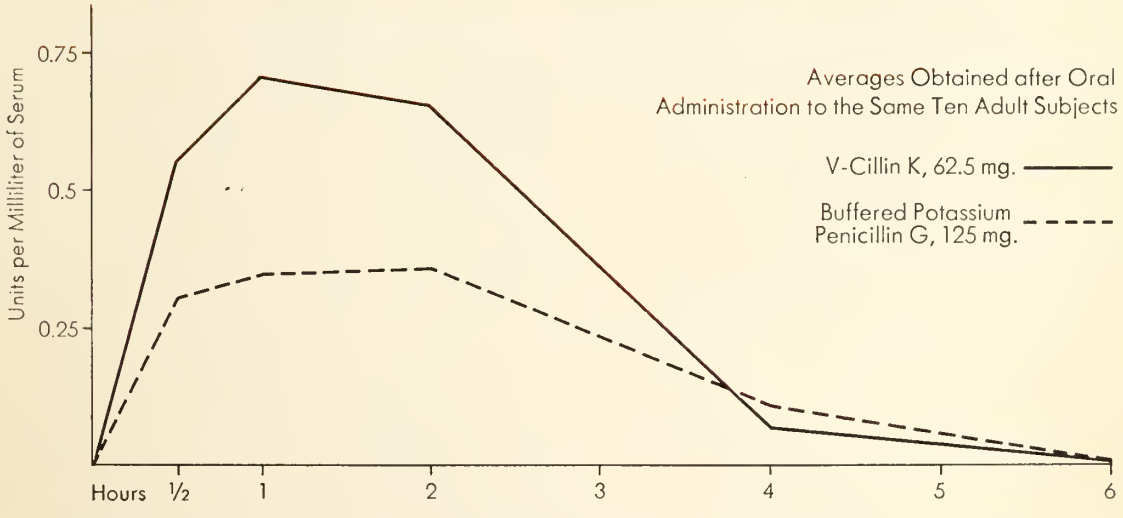
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Methicillin	1.6	0.4-6.3	0.2	0.1-0.4	0.2	0.1-1.6
Oxacillin	0.4	0.1-3.1	0.04	0.02-0.4	0.1	0.04-0.8
Cloxacillin	0.2	0.2-0.8	0.1	0.1-0.8	—	—
Nafcillin	0.4	0.2-0.8	0.04	0.02-0.1	0.02	0.02-0.2
Ampicillin	0.2	0.1-0.8	0.02	0.01-0.04	0.02	0.01-0.04

Adapted from Klein, J. O., and Finland, M. New England J. Med.,269 1019, 1963.

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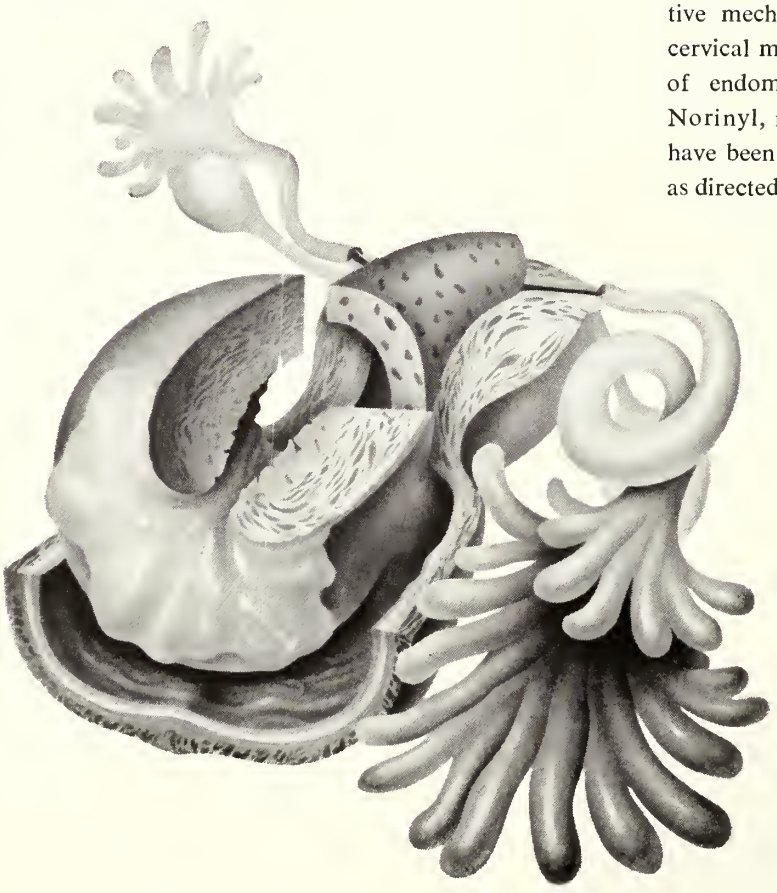
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Warning: Discontinue medication pending examination if there is sudden partial or complete loss of vision, or if there is a sudden onset of proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn.

Precautions: By May 1963, experience with norethindrone 2 mg.—mestranol 0.1 mg. had extended over 24 months. Through miscalculation, omission or error in taking the recommended dosage of Norinyl, pregnancy may result. If regular menses fail to appear and treatment schedule has not been adhered to, or if patient misses two menstrual periods, possibility of pregnancy should be resolved before resuming Norinyl. If pregnancy is established, Norinyl should be discontinued during period of gestation since virilization of the female fetus has been reported with oral use of progestational agents or estrogen. When lactation is desired, withhold Norinyl until nursing needs are established. Existing uterine fibroids may increase in size. In metabolic or endocrine disorders, careful clinical preevaluation is indicated. A few patients without evidence of hyperthyroidism had elevated serum protein-bound iodine levels, which in the light of present knowledge, does not necessarily imply hyperthyroidism. Protein-bound iodine increased following estrogen administration. Bromsulphalein retention has occurred in up to 25% of patients without evidence of hepatic dysfunction. Studies from 24-hour urine collections have shown an increase in aldosterone and 17-ketosteroids and decrease in 17-hydroxycorticoid levels. Thus, Norinyl should be discontinued prior to and during thyroid, liver or adrenal function tests. Because progestational agents may cause fluid retention, conditions such as epilepsy, migraine and asthma require careful observation. Thus far no deleterious effect on pituitary, ovarian or adrenal function has been noted; however, long-range possible effect on these and other organs must await more prolonged observation. Norinyl should be used with caution in patients with bone, renal or any disease involving calcium or phosphorus metabolism.

Side Effects: Intermenstrual bleeding; amenorrhea; symptoms resembling early pregnancy, such as nausea, breast engorgement or enlargement, chloasma and minor degree of fluid retention (if these should occur and patient has not strictly adhered to medication plan, she should be tested for pregnancy); weight gain; subjective complaints such as headache, dizziness, nervousness, irritability; in a few patients libido was increased. In a total of 3,090 patients, 2.2% discontinued medication because of nausea.

NOTE: See sections on contraindications and precautions for possible side effects on other organ systems.

Dosage and Administration: One Norinyl tablet orally for 20 days, commencing on day 5 through and including day 24 of the menstrual cycle. (Day 1 is the first day of menstrual bleeding.)

Availability: Dispensers of 20 and 60 tablets; bottles of 100.

References: 1. Council on Drugs: JAMA 187:664 (Feb 29) 1964. 2. Bryans, F. E.: Canad Med Ass J 92:287 (Feb 6) 1965. 3. Goldzieher, J. W.: Med Clin N Amer 48:529 (Mar.) 1964. 4. Cohen, M. R.: Paper presented at Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965. Reported in Med Sci 16:26 (Nov.) 1965. 5. Hammond, D. O.: Ibid. 6. Rice-Wray, E., Goldzieher, J. W., and Aranda-Rosell, A.: Fertil Steril 14:402 (Jul.-Aug.) 1963. 7. Goldzieher, J. W., Moses, L. E., and Ellis, L. T.: JAMA 180:359 (May 5) 1962. 8. Kempers, R. D.: GP 29:88 (Jan.) 1964. 9. Tyler, E. T.: JAMA 187:562 (Feb. 22) 1964. 10. Rudel, H. W., Martinez-Manautou, J., and Maqueo-Topete, M.: Fertil Steril 16:158 (Mar.-Apr.) 1965. 11. Flowers, C. E., Jr.: N Carolina Med J 25:139 (Apr.) 1964. 12. Goldzieher, J. W.: Appl Ther 6:503 (June) 1964. 13. The Control of Fertility. Report adopted by the Committee on Human Reproduction of the American Medical Association: JAMA 194:462 (Oct. 25) 1965. 14. Flowers, C. E., Jr.: JAMA 188:1115 (June 29) 1964. 15. Merritt, R. I.: Appl Ther 6:427 (May) 1964. 16. Newland, D. O.: Paper presented at Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965. Reported in Med Sci 16:26 (Nov.) 1965.

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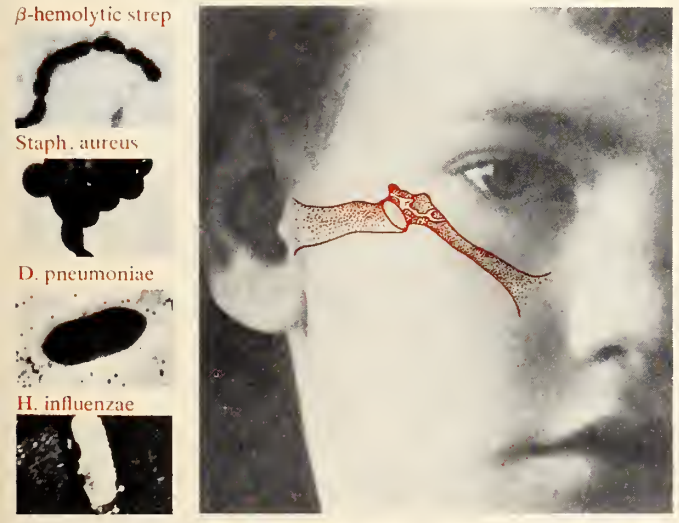

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proven effectiveness against major U.R.I. pathogens including beta-hemolytic strep

With Gantanol (sulfamethoxazole), bacteriologic conversion rates for beta-hemolytic streptococci are comparable to those generally seen with penicillin, and apparently superior to those cited in the literature for erythromycin and the broad-spectrum antibiotics.[1,2] With conversion rates ranging from a high of 96% in 229 patients[2] and 98% in 96 cases[3] to 65% in 105 cases,[5,6] Gantanol (sulfamethoxazole) Suspension is an effective alternative therapy in patients sensitive to penicillin, the drug of choice in known beta-hemolytic streptococcal infections.

In addition to this effectiveness against beta-hemolytic streptococci,[1-9] bacteriologic conversion rates have averaged 69% for *D. pneumoniae* (103 of 150 patients),[3,6,7] 78% for *H. influenzae* (42 of 54 patients),[3,4,7] and 67% for *Staph. aureus* (76 of 113 patients).[3,4,6,7] It is this wide spectrum of activity which makes Gantanol (sulfamethoxazole) Suspension a good choice in acute pharyngitis, tonsillitis and otitis media.



therapy generally uncomplicated by side effects

Over 8 out of 10 U.R.I. patients—87% of 2231 patients—showed an excellent to satisfactory clinical response to Gantanol (sulfamethoxazole).[1-13] Such favorable results are even more meaningful in view of the fact that only 1.1% of the more than 2000 cases cited discontinued therapy because of side effects. Of the total side effects reported (4.6%), most were mild and included rash, urticaria, itching, dizziness, headache, diarrhea, nausea and vomiting, shivering sensation, skin discoloration and crystalluria.[1-13]

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Acute and chronic respiratory and urinary tract bacterial infections due to susceptible microorganisms. At present penicillin is considered the drug of choice in acute group A beta-hemolytic streptococcal infections; however, Gantanol (sulfamethoxazole) has shown an effectiveness approaching that of penicillin in a large number of patients. If employed in such infections, *it is important that therapy be continued in the usual recommended dosage for a period of at least 10 days.*

Contraindicated in sulfonamide-sensitive patients, pregnant females at term, premature infants or infants during first 3 months of life.

Warnings: Use only after critical appraisal in patients with liver damage, renal damage, urinary obstruction or blood dyscrasias. If toxic or hypersensitivity reactions or blood dyscrasias occur, discontinue therapy. In intermittent or prolonged therapy, blood counts and liver and kidney function tests should be performed. Data insufficient on prolonged or recurrent therapy in chronic renal diseases of children.

Precautions: Observe usual sulfonamide therapy precautions, including maintenance of an adequate fluid intake. Use with caution in patients with histories of allergies and/or asthma. Patients with impaired renal function should be followed closely since renal impairment may cause excessive drug accumulation. Occasional failures may occur due to resistant microorganisms. Not effective in virus or rickettsial infections.

Adverse Reactions: Following may occur: headache, nausea, vomiting, urticaria, diarrhea, hepatitis, pancreatitis, blood dyscrasias, neuropathy, drug fever, Stevens-Johnson syndrome, skin rash, injection of the conjunctiva and sclera, petechiae, purpura, hematuria and crystalluria.

Dosage: Children—1 teasp./20 lbs initially, followed by ½ teasp./20 lbs b.i.d. *Adults*—4 teasp. initially, followed by 2 teasp. b.i.d. or t.i.d., depending upon severity of infection.

How Supplied: Suspension 10%, 0.5 Gm sulfamethoxazole/5 cc teasp., cherry-flavored, bottles of 16 oz.

References: 1. Braden, B.; Colmore, J. P., and Cummings, M. M.: Antimicrobial Agents Annual–1960, p. 54. 2. Alban, J.: *Am. J. Dis. Child., 109*:304, 1965. 3. Elia, J. C.: *Eye Ear Nose & Throat Month., 41*:722, 1962. 4. Carter, C. H.: *Clin. Med., 71*:1571, 1964. 5. Jackson, H.; Cooper, J.; Mellinger, W. J., and Olsen, A. R.: *Southwestern Med., 44*:246, 1963. 6. Reichelderfer, T. E.: *Clin. Med., 71*:1045, 1964. 7. Peters, J. H.: Scientific Exhibit presented at the Spring Meeting of the American Academy of Pediatrics, April 26-29, 1965. 8. Peters, J. H.: Antimicrobial Agents and Chemotherapy–1961, p. 406. 9. Braden, B., and Colmore, J. P.: *J. Oklahoma M. A., 57*:7, 1964. 10. Chastain, P. J.: *J. Florida M. A., 48*:816, 1962. 11. Grater, W. C.: *Antibiotics & Chemother., 12*:450, 1962. 12. Exline, A. L.: *Colorado GP, 5*:(5), 11, 1963. 13. Patton, J. M.: *West. Med., 5*:46, 1964.

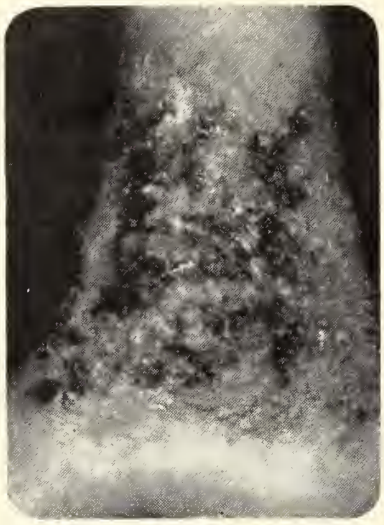
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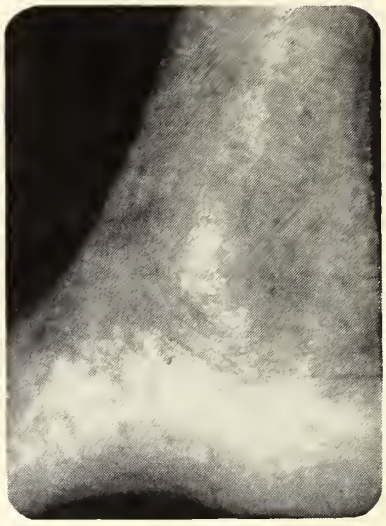
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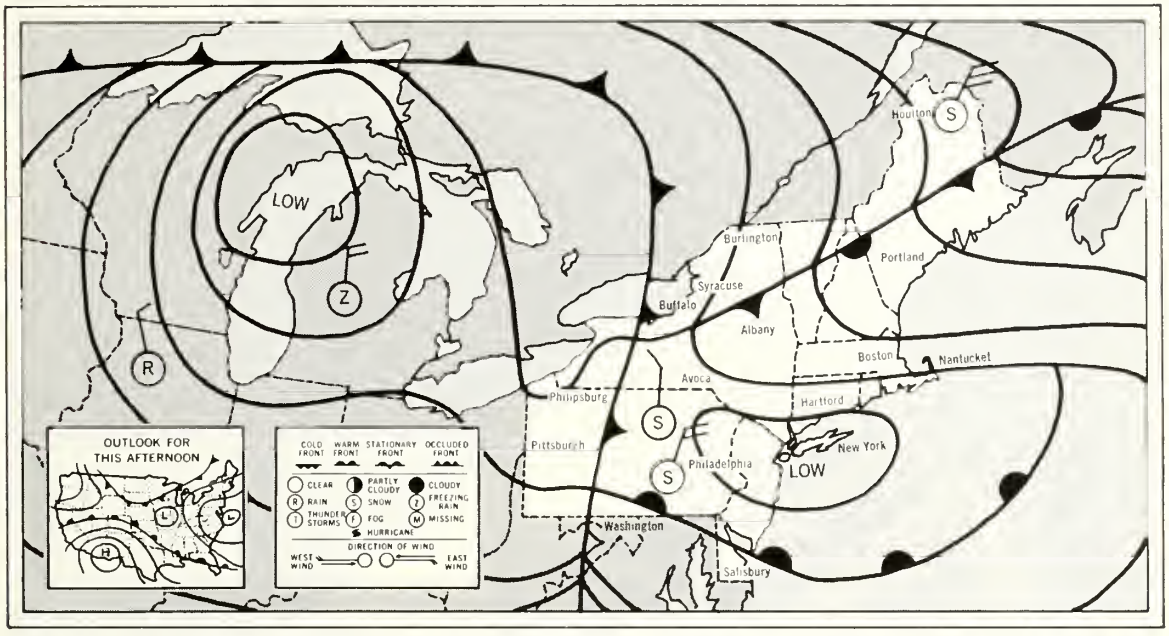
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The Journal
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Volume Fifty-Eight | Brunswick, Maine, January, 1967 | No. 1

Research in Maine

William H. Austin, M.D.

GUEST EDITOR

This issue of the Maine Medical Journal is devoted to papers dealing with research projects carried out within the State of Maine. Almost all of the studies cited have been supported, at least in part, by agencies within the state. For these two reasons and for others, it seems only proper that the medical profession and ancillary organizations be informed in a formal manner of the scope and depth of this research.

In keeping with the editorial policies of this and other medical journals, the information is presented in the usual form; i.e., introduction, methods, results, etc. We appreciate that all the information may not be immediately important to the practicing physician but its inclusion is necessary for complete documentation of the work described. We also realize that the subject material itself may not be of current value for the day to day practice of medicine but it may be the "stuff" of which medicine is made in the future.

The fact that the reports here published are from one area of the State is a matter of administrative convenience only. We are aware that meritorious research is conducted throughout Maine and we hope that other investigators will be encouraged to contribute to a "research issue" in the future.

A New Approach to the Early Diagnosis of Lung Disease

A Progress Report*

GEORGE P. LORD, M.D.**

INTRODUCTION

The long term management of patients with established lung disease is often exasperating for both patient and physician. One approach to the problem is early diagnosis and appropriate treatment before irrevocable lung damage occurs. To date population screening has been of limited value, largely because of the time needed to analyze collected data. A new technique under study here combines a sensitive spirometer with a digital computer. The device analyzes airflow during a forced expiration and compares it to norms contained in the computer memory.

In the past, screening for lung disease utilized the time-honored spirogram. In a spirogram, lung volume is displayed against time. The present study utilizes the "expiratory-flow-volume-curve" (EFVC) in which expiratory airflow is projected against lung volume (Fig. 1.). The principle value of the EFVC depends upon the fact that lung volume "sets" maximum expiratory airflow rate[1] and patterns are evolved which are easily recognized. Conceptually, the lung may be thought of as a spring, one end of which is inserted into the visceral pleura, the other end into the "outer walls" of the intrathoracic airways. As one inhales, airways expand because the "pulmonary parenchymal spring" is stretched. As one exhales, the recoil tension within the lung decreases, the airways narrow, and maximum expiratory airflow rate decreases. Thus, the flow rate-lung volume relationship becomes a reproducible indication of airway disease.

The pattern of the EFVC is acute bronchial asthma, chronic bronchitis and emphysema, pulmonary fibrosis and localized tumors of the airways has been defined.[3,4,5] Using EFVC information from abnormals, a digital computer was programmed to recognize these patterns in a population sample.

METHODS

Expiratory airflow rate and expired lung volume are measured with a wedge type bellows spirometer (Fig. 2) (Med-science Electronics, Model 370). The spirometer is calibrated prior to use and voltages proportional to 5.0 liters of volume and 5.0 liters/sec flow are corrected appropriately and the calibration data printed on the computer tape. The method of collecting the data has been described in detail.[2] Essentially, the subjects are standing

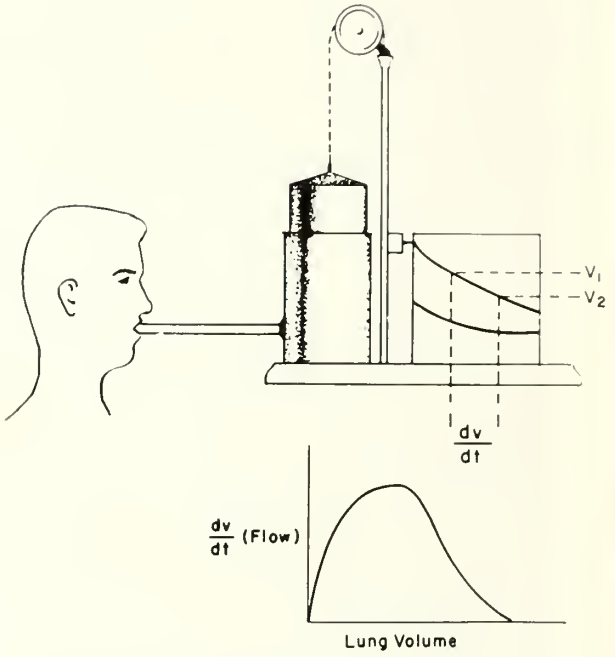


FIG. 1: THE STANDARD SPIROGRAM COMPARED TO THE FLOW-VOLUME CURVE

In a spirogram the subject exhales into the spirometer and changes in lung volume are displayed against time as set by the rotational speed of the spirometer kymograph. In the flow-volume curve below, expiratory flow rate is depicted against expired lung volume. Small but significant changes in flow which are obscured on the spirogram are easily seen on the flow volume curve.

connected by wide-bored tubing to the spirometer. On signal, they inspire deeply and exhale without pausing. The digital voltmeter is turned on just before the onset of expiration. The flow and volume output are monitored on the face of an oscilloscope which the subject can see. He is asked to produce the "best curve," that is, the one with the greatest area subtended between the curve and the volume abscissa. This curve approximates the maximum expiratory flow-volume curve fairly closely in normals.[1]

Three flow-volume curves were obtained from each of 350 normal subjects. An appropriate identification signal containing sex, age, height, weight, smoking history and previous history of lung disease preceded the flow-volume data. During the course of six seconds following the onset of expiration from peak lung inflation, 300 digital words representing simultaneous values of flow and volume were recorded. On the tape a "flow word" is contained in 18 bits of information in the top "frame" of a 36 bit word. The bottom 18 bits

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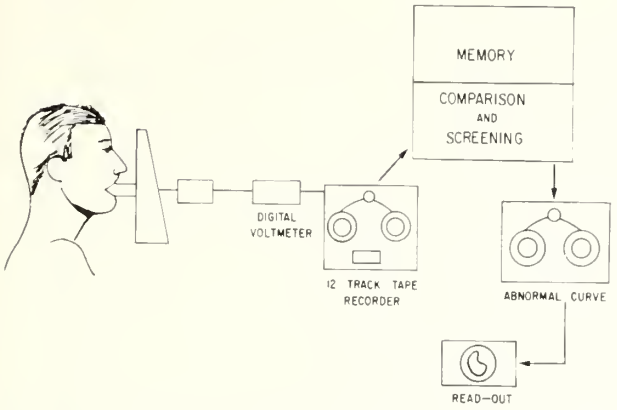


FIG. 2: THE SYSTEM FOR RECORDING FLOW-VOLUME CURVES FOR COMPUTER ANALYSIS

The subject is connected to a wedge spirometer. During expiration electrical signals proportional to flow and lung volume are generated and converted for recording on a digital electromagnetic tape. When a tape is completely filled with data, it is taken to the computer and the flow-volume information is compared with similar records from subjects of the same sex, age and height. Abnormal curves are identified in the computer and recorded on a second tape for further study. Subjects with well defined abnormalities are notified and directed to their family physician for appropriate follow-up care.

contain a binary coded decimal proportional to the volume signal. The incremental digital voltmeter sampling rate is 50 cycles per second.

Each normal subject completed a 50 item pulmonary questionnaire. This questionnaire was specifically designed for this study. The information from the questionnaire was punched on data processing cards. The computer program then determined the following variables from the best flow-volume curve from each subject: Forced vital capacity, peak flow rate, ratio of forced vital capacity to peak flow rate, area under the curve, flow rates at ten percentiles of lung volume and time to reach peak flow. Newer programs include the angle of intercept at the volume axis and the area embraced by two vertical lines drawn to the curve from the 40 and 60 percentile points subtracted from a trapezoid produced by a straight line drawn between these points. The difference in area is a function of the convexity of the flow-volume curve during the expiratory descent. Convexity is seen in early airway obstructive disease and in aging.

RESULTS

The typical expiratory flow-volume curve (EFVC) patterns in fibrosis, emphysema and bronchial narrowing due to tumor are seen in the three panels of Fig. 3. In fibrosis, upper panel, the lungs are stiff. They deform little with motion of the chest cage, but they exert a strong retractile force on the airways. For this reason airflow is unimpeded, but the total volume exhaled is small. Thus, the EFVC rises rapidly to peak flow, but from peak flow it falls abruptly to the forced expiratory position. The total curve resembles a para-

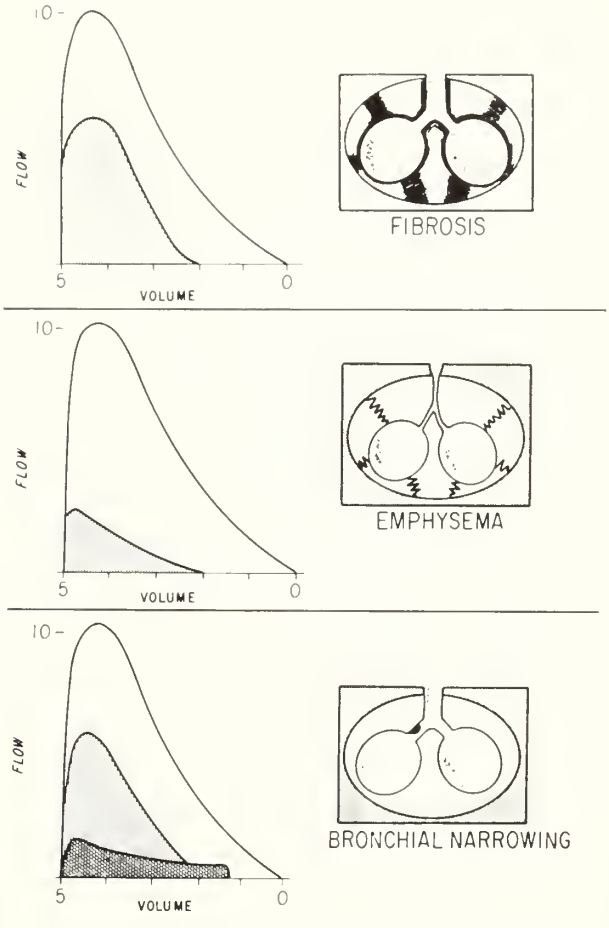


FIG. 3: FLOW-VOLUME CURVES IN DISEASE STATES

Upper Panel: The expiratory flow-volume curve (EFVC) from a normal is compared to a patient with pulmonary fibrosis. In fibrosis, as compared to normal, peak flow rate is reduced, and the expiratory descent is steeper, as a reflection of the "stiff" lung shown schematically at the right.

Middle Panel: By contrast, in emphysema, the EFVC is oriented along the volume axis, with a low peak flow rate and a gently convex expiratory descent.

Bottom Panel: A schematic representation of the EFVC from a patient with obstructing carcinoma of the right upper lobe. The curve is comprised of two distinct components. One component of airflow comes from the normal lung (upper vertically striped area), the other from the obstructed lung (lower hatched area). In most patients with tumors of the airway, this distinction is not clear-cut.

Flow = Expiratory air flow in liters per second.
Volume = Expired lung volume in liters; "O" = the forced expiratory position.

bola with the slope and configuration of the rise to peak flow resembling the configuration of the down slope to the forced expiratory position. The computer recognizes this pattern by the large peak flow to forced vital capacity ratio, the steep descent to the forced expiratory position and the large angle of intercept at the volume axis.

In chronic obstructive lung disease, (middle panel – Fig. 3), the EFVC is characterized by a low peak flow

rate and an expiratory descent which is convex or flattened to the volume axis. The measurement of peak flow rate and the overall pattern of the curve correlate well with clinical severity of obstructive disease.[3] The computer recognizes this pattern by the low peak flow in relation to forced vital capacity, the convexity of the expiratory descent and the acute angle of intercept of the curve with the volume axis at the forced expiratory position.

Patients with tumors involving the major airways often demonstrate a pattern which is clearly differentiated from normal. A schematic representation of an EFVC from a patient with a partially obstructing tumor of the right upper lobe bronchus is shown in the bottom panel of Fig. 3. Obstructed airflow coming from the lung peripheral to the tumor escapes slowly and gives rise to the lower, hatched curve. Airflow from the normal lung exits rapidly, giving rise to the normal appearing vertically striped curve superimposed over the obstructed one. As may be seen, the resultant curve is a composite of these two curves. It is characterized by a sharp angulation in the curve somewhere in the expiratory descent. The computer detects the angulation, expressed as compartmental inhomogeneity, by a series of calculations which depend on the fact that gas from all normal lungs is expressed from a single reservoir of air. While some inhomogeneity of expiratory airflow exists even in normal lungs significant inhomogeneity is a reflection of a compartmentalized system. The best computer program to detect compartmentalization has yet to be found. Moreover, lung cancer occurs in the general population with an incidence of 1:5000 and pieces of mucous in the airway can produce compartmentalization also. At present all patients with clear-cut compartmentalization are identified and contacted for restudy. If the change is reproducible, a cytologic examination of the sputum is performed.

From a study of normal people the following generalizations can be made about the "normal" flow-volume curve: In young people between 15 and 35 years of age the curve rises abruptly to peak flow. The expiratory descent is usually gently concave to the volume axis initially, but later, particularly in young males, the descent is almost straight. With aging, the concavity is lost and a gentle convexity of the curve appears. This change is quite variable in degree and age of onset. Superficially, the change resembles in many ways the change in early airway obstruction. This convexity change is receiving intense study at this time to determine whether any difference can be found between age change and intrinsic airway pathology.

Discussion

Long before it becomes clinically apparent lung disease can be diagnosed by means of a device which combines an accurate spirometer with a digital computer. This technique has been applied to patients and normals. Each "normal" curve is compared to the abnormal. If abnormality is found, the type and degree are ascertained.

Screening for chronic obstructive lung disease indicates that 10% of the adult middle-aged male population may be affected. While screening procedures are not the final answer to this growing menace they allow a more detailed understanding of the nature of airway disease in the population, the character of its presentation and its natural evolution. From the study of the normal curves in this investigation, a significant population of persons with subclinical airway disease was found.

In the past, screening procedures have been expensive. By contrast, computer detection is cheap. It took six minutes for the IBM 7094 computer to analyze over 900 flow-volume curves and detect subjects with one abnormal parameter. Computer time costs $180 per hour. The computation for this study cost one-tenth of that, or about $18. In this population sample 5% of the curves were abnormal. The cost to detect one abnormal subject was less than a quarter.

The ultimate aim of this research is to produce efficient programs to identify early lung and airway disease. Once the best programs have been devised, they will be recorded on electromagnetic tape and filed at the American Documentation Institute in Washington, D.C. available for any laboratory or screening unit in the world. Moreover, the program material can be transmitted to the recipient over a standard telephone line.

We all look forward to the day when the pathologic sequence which gives rise to chronic obstructive lung disease is unraveled. Until that time, it would seem wise to approach the overall problem with early diagnosis and treatment. It would appear, from this initial experience, that computer technology is the key.

Acknowledgment

The author wishes to express his appreciation to Dr. Thomas Ely and to the Kodak Company, Rochester, New York for help in studying their normal population of employees. The help of Dr. David Dutton and Mr. Michael Armstrong of the computing center at the University of Rochester is also acknowledged. At present the computing facilities at Harvard University are utilized and appreciation is expressed to the staff of that organization.

References

1. Hyatt, R. E.: Dynamic Lung Volumes, Handbook of Physiology, Vol. II, Section 3, 1381-1397. American Physiological Society, Washington, D.C. 1965.
2. Lord, G. P., Bond, G. F., Schaefer, K. E.: High Ambient Pressure Breathing, Journal of Appl. Physiology November 1966.
3. Lord, G. P., Gazioglu, K. G.: The Role of the Expiratory Flow-Volume Curve in the Diagnosis of Lung Disease. Submitted for publication, New England Journal of Medicine, 1966.
4. Mellins, R. B., Lord, G. P.: Breathing in Asthma, Medicina Thoracalis. (to be published).
5. Lord, G. P., Schreiner, B. F.: The Expiratory Flow-Volume Curve in Emphysema, Fibrosis and Carcinoma of the Lung. Fed. Proc., American Physio. Society, Spring 1966. Abstract #1785.

Design of Accurate Vector Lead Systems*

C. V. NELSON, Ph.D.**

It has been shown[1] that the magnitude and direction of the heart vector can be found from an integration of potential over the body surface. Although this is a general method which can be used for both young and adult human beings or animals, its application has been limited because of the large amount of labor required. The theory provides a basis, however, for the design of practical vector lead systems, using a smaller number of electrodes. Such lead systems have been described by Barber and Fischmann[2] and by Nelson.[3] An important result of these studies is that *the dimensions of the thorax must be included in the determination of the magnitude of the vector.*

The question as to what constitutes a sufficient number of electrodes is still unresolved. Up to a certain point, the accuracy of the determination is proportional to the total number of properly-placed electrodes used. In the author's system,[3] three rows of 8 equally-spaced electrodes plus a foot-head and ground lead are used, making a total of 27 electrodes. Barber and Fischmann use a much larger number. The Schmitt SVEC system[4] uses 14 electrodes. An extreme way of posing the electrode-number problem would be to ask whether one wishes to obtain an incorrect answer simply, or an accurate answer with somewhat more effort. This is not meant to imply that systems using a small number of electrodes are always wrong, but on the basis of theoretical considerations, it is difficult to see how they can be consistently accurate.

The simplified method depends on the summation of potentials from a specified number of electrodes. There are two ways of carrying out the summations in the horizontal plane. Barber and Fischmann use equal electrode spacing in the x or z directions, with different spacings circumferentially, whereas our method uses equal electrode spacing around the thorax. With a sufficient number of electrodes, however, both methods should give identical results. For purposes of illustration, the method will be described first in two dimensions, and later extended to the development of the complete vector system.

Measurement of Dipole Moment in Two Dimensions

(a) *Summation with equally-spaced electrodes on the body* – Consider a dipole located eccentrically in a circular dish of radius, R, = 7.5 cm. Then[1]

$$M_x = kd \int V\,dz = kd \int V \cos \theta\,dL \qquad (1)$$

$$M_z = kd \int V\,dx = kd \int V \sin \theta\,dL \qquad (2)$$

where M_x, M_z = x and z components of dipole moment, ma – cm

k = conductivity of fluid in dish, ohm^{-1} cm^{-1}

d = depth of fluid, cm

V = potential at any point of boundary of dish, mv

θ = angle between normal to boundary and + x axis, at point where V is measured.

dz, dx, dL = elements of length on z axis, on x axis, and on circumference of circle, respectively.

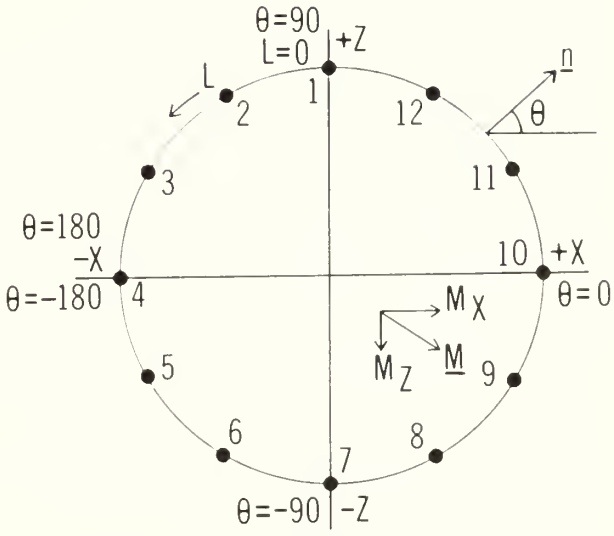


Fig. 1. Dipole M located at x = 2.0 cm, z = – 1.5 cm in circle of radius R = 7.5 cm. Electrodes 1 through 12 are equally spaced around the circumference. The distance, L, around the boundary is measured from the center of the back of the circle in the direction indicated by the arrow. The vector *n*, normal to the boundary, makes the angle θ with the + x axis.

For the circle, the normal angle θ is equal to the angle made by the radius to the boundary point and the + x axis. For other shapes, this is generally not the case; θ must be found by measurement. The designations of axes have been changed from those used in reference 1 in order to conform with accepted vectorcardiographic notation.

Although a circle is used in this example, equations 1 and 2 hold for any closed, non-reentrant shape, such as an ellipse or the thorax cross-section. Fig. 1 shows 12 *equally-spaced* electrodes on the boundary, numbered 1 through 12. Referring to the 2nd term in equation 1, the problem is to evaluate $\int V \cos \theta\,dL$ using only 12 electrodes. This is done by measuring V for each electrode, multiplying by the corresponding value of cos θ, and plotting V cos θ as a function of L, as shown in

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** Research Associate, Cardiology Department, Maine Medical Center, Portland, Maine 04102.

Fig. 2. The value of the integral is then equal to the area under this curve.

The area can be found accurately by a planimeter or by counting the squares under the curve. An approximate determination can be found from tabular integration. The ordinates f_1, f_2 – f_{12} in Fig. 2 are the values of V cos θ at electrodes 1 through 12. As measurements are made completely around the boundary, f_1 is included at both ends of the graph. The total area is now divided into 12 sub-areas. The value of any sub-area is approximately equal to its base multiplied by the average of the two ordinates. For example,

$$A_1 = \frac{L}{12}\left[\frac{f_1 + f_2}{2}\right] \qquad (3)$$

The total area is given in equation 4

$$\int V \cos\theta \, dL = \frac{L}{12}\left[\frac{f_1 + f_2}{2} + \frac{f_2 + f_3}{2} + \cdots + \frac{f_{11} + f_{12}}{2} + \frac{f_{12} + f_1}{2}\right] = \frac{L}{12}\Sigma f_n = \frac{L}{12}\Sigma V_n \cos\theta_n \quad (4)$$

To find the value of the integral, therefore, the measured values of V cos θ are added together, and the sum is multiplied by L/12. It is evident that the closeness of the approximation is a function of the number of ordinates, or electrodes, used. In carrying out this process, it is important that the correct algebraic sign of cos θ (+ or −) be used with each electrode potential.

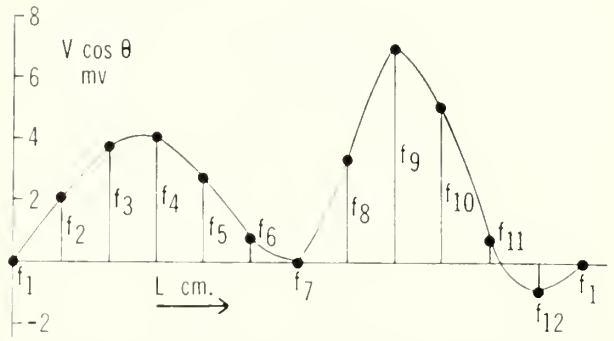


Fig. 2. The potential, V, of each of the electrodes of Fig. 1, is multiplied by the value of cos θ at that point. V cos θ is then plotted against L. The area under the curve is equal to the sum of 12 sub-areas, each having a base length equal to L/12. Each sub-area is approximately equal to the average of its ordinates multiplied by L/12.

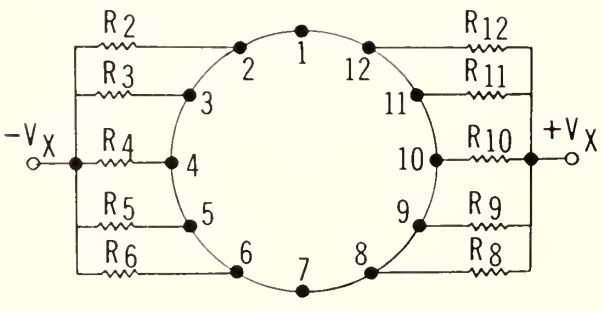


Fig. 3. Resistance network for carrying out the summation of V cos θ automatically. The value of each resistor is such as to multiply the electrode potential by cos θ. M_x is proportional to the bipolar potential difference, V_x. Since cos θ = O at electrodes 1 and 7, these electrodes need not be included in the x-lead network.

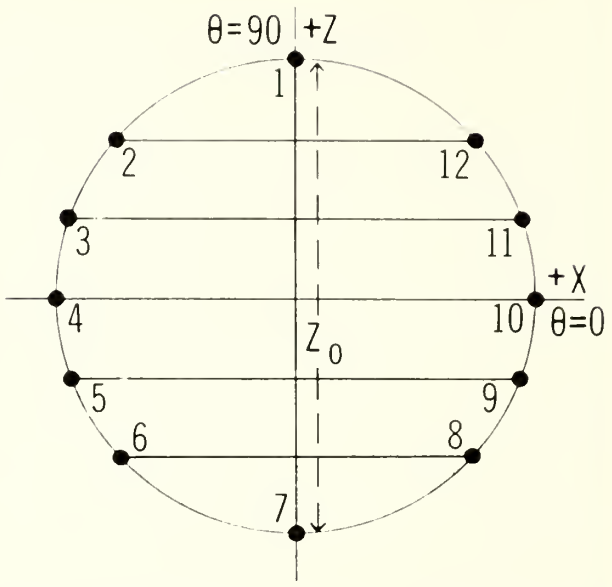


FIG. 4. The front-back distance, Z_0, is divided into 6 equal intervals, producing electrode positions as shown. With this electrode arrangement, the resistors in Fig. 3 can all have the same value.

The summation can also be done automatically with the network of Fig. 3. The resistance values are chosen such that each electrode potential is weighted by the appropriate value of cos θ. It is not necessary to include electrodes 1 and 7 in the network, since cos θ = 0 at these points. The network produces an attenuation factor, but this is constant and can be compensated for by adjusting the amplifier gain. Hence, from equations 1 and 4

$$M_x = \frac{K_1 \, L \, d}{12 \, \rho} V_x \qquad (5)$$

where K_1 is a constant, L is the circumference, ρ = resistivity and V_x is the measured bipolar potential difference.

In equation 2, M_z can be found in a similar manner, except that the potentials are multiplied by sin θ instead of cos θ. A network similar to that in Fig. 3 can be used, with the positive z resistors connected to electrodes 11, 12, 1, 2 and 3, and the negative z resistors connected to electrodes 5, 6, 7, 8, and 9. Then

$$M_z = \frac{K_2 \, L \, d}{12 \, \rho} V_z \qquad (6)$$

Equations 5 and 6 show that the circumference, L, must be included in the measurement of M_x and M_z.

The validity of equations 1 and 2 has been checked by Brody,[5] who applied currents, weighted in proportion to the normal boundary angles, to equally-spaced electrodes. He found that when this was done, lead field lines parallel to the axes were obtained.

(b) *Summation with non-uniform spacing of electrodes on the boundary* – The first form of equation 1

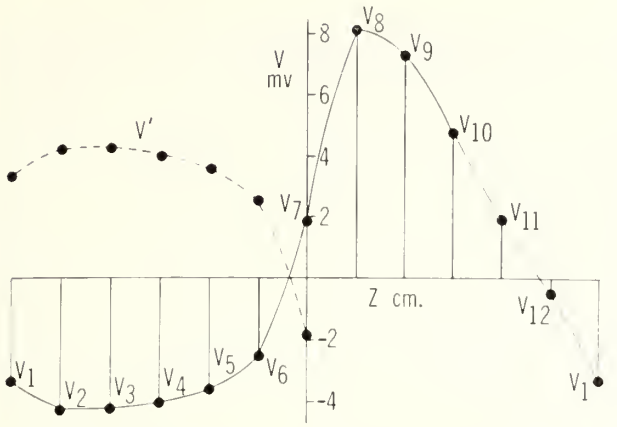


Fig. 5. Plot of potential, V, on the boundary as a function of distance along the z axis. The total area is again equal to the sum of the 12 sub-areas. Since the path from electrodes 1 to 7 is in the negative direction of z, the potentials V_1 through V_7 must be reversed in sign before being added to V_7 through V_1. In this process, V_1 and V_7 cancel out. The reversed curve is labelled V'.

is $M_x = k\ d \int V\ dz$. In order to find $\int V\ dz$, the total z distance of the figure is divided into equal increments, as shown in Fig. 4. With 12 electrodes, the front-back distance, Z_o, is divided into 6 equal intervals. When this is done, the spacing of electrodes around the boundary is not uniform. Fig. 5 shows a plot of potential on the boundary for equal increments of z. Starting with electrode number 1, the integration must be carried out in two parts, because there is a reversal in direction of z. For the path, 1,2,3----7, dz is negative, and for the path 7,8,9-1, dz is positive. Therefore, adding the sub-areas as before

$$\int V\ dz = \frac{Z_o}{6}\left[-\frac{V_1+V_2}{2}-\frac{V_2+V_3}{2}\text{ ----- }-\frac{V_6+V_7}{2}+\frac{V_7+V_8}{2}+\frac{V_8+V_9}{2}+\text{ ---------- }+\frac{V_{12}+V_1}{2}\right]$$

$$= \frac{Z_o}{6}\left[\sum_{8}^{12} V_n - \sum_{2}^{6} V_n\right] \qquad (7)$$

and therefore

$$M_x = \frac{d\ Z_o}{6\ \rho}\left[\sum_{8}^{12} V_n - \sum_{2}^{6} V_n\right] \qquad (8)$$

V_1 and V_7 cancel out in the summation. Using a network similar to Fig. 3,

$$M_x = \frac{K_3\ Z_o\ d}{6\ \rho}\ V_x \qquad (9)$$

Similarly

$$M_z = \frac{K_4\ X_o\ d}{6\ \rho}\ V_z \qquad (10)$$

An advantage of this type of summation is that equal resistors can be used in the network. On the other hand, the electrode positions on the front and back are generally different from the positions on the sides. This may be seen by comparing Fig. 6, for equal increments of x, with Fig. 4. In equations 9 and 10, the front-back distance, Z_o, and the left right distance, X_o, are included in the measurement of the dipole components.

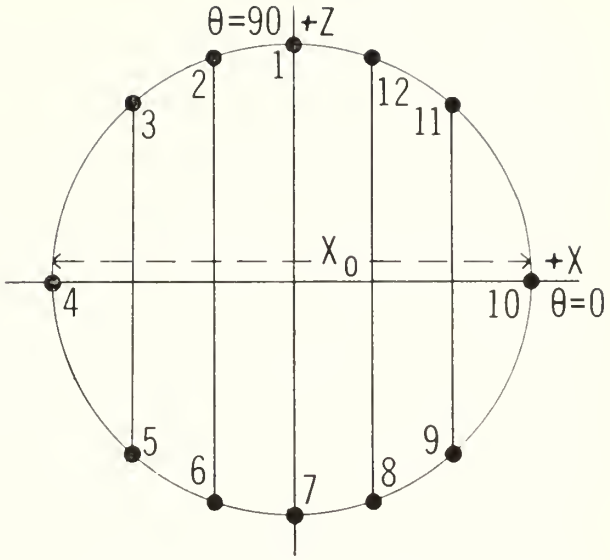


Fig. 6. The left-right distance, X_o, is divided into 6 equal intervals. Note that, except for the axial electrodes, the electrode positions are different from those shown in Fig. 4.

Barber and Fischmann[2] showed that when electrodes spaced in this fashion were energized with equal currents, uniform lead-field lines were obtained.

Experimental Test of Methods in Two Dimensions

One of the reasons for choosing a circle for illustration of the theory, rather than an ellipse or some other shape, is that experiments or calculations can be more easily carried out with the circle.[6,7] The potentials in this experiment were measured relative to a Bayley averaging network; i.e. the common junction of a network of 1 megohm resistors connected to each electrode. Fig. 1 shows an experiment in which the dipole was placed at x = 2.0 cm, z = −1.5 cm and making an angle of − 35° with the + x axis. The current was 0.206 ma, and pole spacing was 1.025 cm. Then M = 0.211 ma-cm, M_x = 0.173 ma-cm, M_z = − 0.121 ma-cm. The fluid had a resistivity of 257 ohm-cm, and the depth d was 0.399 cm, as measured with a spherometer. The radius R was 7.5 cm, so L = 47.12 cm. The data for 12 uniformly spaced electrodes are shown in Table 1. Using equations 1 and 4,

$$M_x = \frac{(.399)\ (47.12)\ (27.91)}{(257)\ \ \ (12)} = 0.170 \text{ ma-cm}$$

also

$$M_z = \frac{(.399)\ (47.12)\ (-19.00)}{(257)\ \ \ (12)} = -0.116 \text{ ma-cm}$$

With 18 or 36 electrodes, M_x = 0.171, M_z = − 0.117 ma-cm. With a total of 8 electrodes, M_x = 0.170, M_z

TABLE I

DETERMINATION OF M_x AND M_z WITH EQUAL INTERVALS ON BOUNDARY

Electrode No.	*L cm*	*V mv*	θ°	*Cos θ*	*V cos θ*	*sin θ*	*V sin θ*
1	0	−3.37	90	0	0	1.00	−3.37
2	3.93	−4.11	120	−.500	2.06	.866	−3.56
3	7.85	−4.32	150	−.866	3.74	.500	−2.16
4	11.78	−4.05	180	−1.00	4.05	0	0
5	15.71	−3.16	−159	−.866	2.74	−.500	1.58
6	19.63	−1.39	−120	−.500	0.70	−.866	1.20
7	23.56	1.86	− 90	0	0	−1.00	−1.86
8	27.49	6.47	− 60	.500	3.24	−.866	−5.60
9	31.41	7.92	− 30	.866	6.86	−.500	−3.96
10	35.34	4.83	0	1.00	4.83	0	0
11	39.27	0.75	30	.866	0.65	.500	0.38
12	43.19	−1.91	60	.500	−0.96	.866	−1.65
1	47.12						
					$\Sigma = 27.91$		$\Sigma = -19.00$

$= -0.116$ ma-cm, but with only 4 electrodes, $M_x = 0.162$, $M_z = -0.905$ ma-cm. In this case, therefore, 8 electrodes are sufficient for accurate results.

Table 2 shows the data for the summations with equal increments of z and x for 12 electrodes. The columns labelled V give the potentials around the boundary of the circle. When integrating in the negative z or x direction, the potential can be inverted, as shown in the V′ column. The V′ values are then added to get the summation. Using equations 8 and 10,

$$M_x = \frac{(.399)\ (15)\ (40.56)}{(6)\ (257)} = 0.158 \text{ ma-cm}$$

$$M_z = \frac{(.399)\ (15)\ (-26.93)}{(6)\ (257)} = -0.105 \text{ ma-cm}$$

With 30 electrodes, $M_x = 0.168$, $M_z = -0.113$ ma-cm. In this case, the summation for 12 electrodes gives more accurate results with the equally-spaced boundary electrodes. Additional comparisons would be necessary, however, before concluding that this method is more accurate than using equal increments on the axes, with a given number of electrodes. With a sufficient number of electrodes, both methods must give the same results.

APPLICATION OF THE THEORY TO THREE DIMENSIONAL VECTOR LEAD SYSTEMS

The basic equation for the resultant dipole moment in three dimensions is, for the x component[1]

$$M_x = k \iint V\, dz\, dy + \iint x\, i_n\, dS \qquad (11)$$

In this equation, V is the potential at a point on the surface, x is the x − coordinate of a surface point, dS is an element of surface area, and i_n is the normal component of current flowing through the surface element. This summation must be carried out over each boundary in the system. If it is assumed that the body is composed of regions of constant conductivity, this can be written

$$M_x = \Sigma\, k \left[\iint V\, dz\, dy + \iint x \frac{\delta V}{\delta n}\, dS \right]$$

where k is given the appropriate value for each internal volume. The effect of internal electrical inhomogeneities can then be determined theoretically, but the equation would be very difficult to apply experimentally. If it is assumed that the body is a homogeneous volume conductor, the 2nd term drops out, as $i_n = 0$ over the external boundary. Then

$$M_x = k \iint V\, dz\, dy = k \iint V \cos\theta\, dL\, dy \qquad (13)$$

$$M_z = k \iint V\, dx\, dy = k \iint V \sin\theta\, dL\, dy \qquad (14)$$

It has also been shown[1] that for the adult human,

$$M_y = k\, A\, (V_f - V_h) + 0.15\, M_z \qquad (15)$$

where A is the thorax cross-sectional area, $V_f - V_h$ = foot-head lead. The factor $0.15\, M_z$ was found empirically from experiments on a thorax model, and represents the voltage appearing in the foot-head lead due to the sagittal component of the heart-vector.

Equation 13 can be written

$$M_x = k \int \left[\int V\, dz \right] dy = k \int \left[\int V \cos\theta\, dL \right] dy \qquad (16)$$

Defining $\int V\, dz = \int V \cos\theta\, dL = F_z$, then

$$M_x = k \int F_z\, dy \qquad (17)$$

If the thorax is divided vertically into a number of horizontal levels, then F_z is the integral around each level, as previously found in the two-dimensional case. The area under a plot of F_z as a function of y gives the required surface integral. The limits of the vertical integration are determined by the levels at which the potential is essentially constant, since around a closed, symmetrical loop,

$$\int K \cos\theta\, dL = K \int \cos\theta\, dL = 0 \qquad (18)$$

where K is a constant. This equation is exact for a circle or ellipse and would be very nearly true for the thorax cross-section.

A graph of F_z for 9 values of y is shown in Fig. 7. If H is the total vertical distance covered,

$$\text{area} = \frac{H}{8} \left[\frac{F_1 + F_2}{2} + \frac{F_2 + F_3}{2} + \cdots + \frac{F_7 + F_8}{2} + \frac{F_8 + F_9}{2} \right] \qquad (19)$$

TABLE 2

DETERMINATION OF M_x AND M_z WITH EQUAL INTERVALS ON AXES

Electrode No.	*z cm*	*V mv*	*V' mv*	*Electrode No.*	*x cm*	*V mv*	*V' mv*
1	7.5	−3.37	3.37	10	7.5	4.83	−4.83
2	5.0	−4.29	4.29	9	5.0	7.80	−7.80
3	2.5	−4.28	4.28	8	2.5	4.87	−4.87
4	0	−4.05	4.05	7	0	1.86	−1.86
5	−2.5	−3.57	3.57	6	−2.5	−0.48	0.48
6	−5.0	−2.58	2.58	5	−5.0	−2.22	2.22
7	−7.5	1.86	−1.86	4	−7.5	−4.05	4.05
7	−7.5	1.86	1.86	4	−7.5	−4.05	−4.05
8	−5.0	8.10	8.10	3	−5.0	−4.25	−4.25
9	−2.5	7.38	7.38	2	−2.5	−3.90	−3.90
10	0	4.83	4.83	1	0	−3.37	−3.37
11	2.5	1.96	1.96	12	2.5	−2.53	−2.53
12	5.0	−0.48	−0.48	11	5.0	−1.05	−1.05
1	7.5	−3.37	−3.37	10	7.5	4.83	4.83
			$\Sigma = 40.56$				$\Sigma = -26.93$

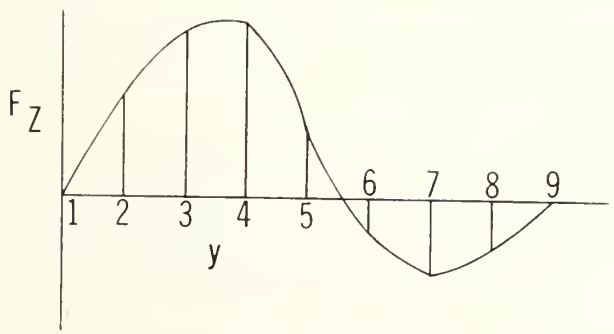


Fig. 7. Plot of F_z as a function of vertical distance y, where $F_z = \int V \cos \Theta \, dL$ around each horizontal level. The levels are chosen so that F_1 and F_9 are zero.

Since F_1 and F_9 are zero, equations 17 and 19 give

$$M_x = \frac{k\ H}{8} \Sigma\ F_z \qquad (20)$$

Similarly,

$$M_z = \frac{k\ H}{8} \Sigma\ F_x \qquad (21)$$

where

$$F_x = \int V \, dx = \int V \sin \Theta \, dL \qquad (22)$$

The preceding equations can be used as the basis for the design of vector lead systems. The horizontal integrations can be carried out by means of resistance networks such as shown in Fig. 3. The values of V_x or V_z from each level must then be added together by means of another network.

DISCUSSION

A practical lead system must be a compromise between accuracy and convenience, although the minimum number of electrodes and levels for a given degree of accuracy has not been determined. Bayley[9] has shown, however, that nine electrodes at equal arc lengths on the boundary of an ellipse are sufficient to determine the magnitude and location of an internal dipole accurately. Fischmann and Elliott[10] have shown, on the basis of model studies, that the parallel grid sagittal lead is more uniform and more orthogonal than any of the other systems tested.

This author has proposed a system using 3 rows of 8 equally-spaced electrodes.[3] The vertical integration is carried out using Simpson's 5- ordinate rule,[11] with the first and fifth ordinates (top and bottom rows) taken as zero. For a small number of ordinates, Simpson's rule is more accurate than the method shown in Fig. 7. It should be pointed out that it is not necessary to put electrodes on the top and bottom rows, as the contribution to the vertical integration from these levels is zero. The spacing of the rows, however, should be such that the potential is constant at equal intervals above and below the top and bottom levels used. In our system, the umbilicus and suprasternal notch are used as reference points, as these are easy to find on the body. If the distance between these points is called H', the electrode rows are at H'/8, H'/2, and $\frac{7\ H'}{8}$ between these points. The summations are carried out by resistance networks.

The equations show that when equal circumferential electrode spacing is used, M_x and M_z are proportional to k H L V_x and k H L V_z. The product H L is the effective thoracic surface area. The vertical component, M_y, is proportional to the thoracic cross-sectional area, A An empirical ratio between H L and A was found, as that all these components can be expressed in terms of k H L.

In the Barber-Fischmann lead system,[2] M_x and M_z are proportional to k H Z_0V_x and k H X_0V_z. The product H Z_0 is equal to the effective area of the sagittal plane through the thorax, and H X_0 is the area of the thoracic frontal plane. These authors use the areas of the electrode banks in their equations, with unused electrodes switched out of the circuit.

A comparison of the two systems shows that each has advantages and disadvantages. In our system, equal elec-

trode spacing around the thorax can be used. Some of the same electrodes are used in both the X and Z leads. A drawback, however, is that unequal resistors must be used. In order to use a network of fixed resistors, it is necessary to assume that the ratio of thorax width to depth is the same for all three levels. This assumption does not produce a serious error, but for greater accuracy, potentiometers could be used, preset for individual level dimensions. Another potentiometer could also be used for inserting the correct value of thorax cross-sectional area in the vertical lead, rather than using an average ratio for all individuals.

In the Barber-Fischmann system, equal resistors are used in the horizontal plane networks, but the electrode spacing is not uniform around the chest, and different electrode positions must be used in the X and Z leads. These authors have solved the problem of electrode location in an ingenious manner, by mounting the electrodes on rods which pass through equally spaced holes in a flat insulating sheet. The rods are mounted on springs which force the electrodes against the thorax. The electrode positioning on the thorax is therefore automatic. As the electrodes are made of balsa-wood impregnated with lithium chloride, no electrode jelly is required, provided high-input impedance amplifiers are used. Using this method, Ellison, Fischmann and Hugenholtz have shown that the dipole moment of children's hearts had a range of 0.3 to 1.7 ma-cm, and showed a good correlation with body weight.[12] These data correlate well with our own results[11] of 2.42 ma-cm for the average peak dipole moment of four young adult males.

The two systems described, or modified systems based on the theory above, must produce identical results, for a sufficient number of electrodes. The choice of a system will depend mainly on convenience and ease of electrode application, and the degree of accuracy required.

The rationale for vector lead system research has been well-expressed by McFee and Johnston:[13] "In order to make the value of the lead field at the body surface exactly equal to the desired value, one would need an infinite number of resistors attached to an infinite number of minute electrodes covering the entire body surface. As a practical thing this is obviously impossible, and also unnecessary. . . . The best criterion for the number of electrodes necessary is a comparison of voltages obtained with a large (and clinically impractical) number, and those obtained when a smaller number of electrodes is employed. When a small number of electrodes furnishes voltages nearly identical to those obtained with the larger number, the smaller number will be sufficiently accurate."

This approach has been utilized in our laboratory, and we have data on the dipole moments of the hearts of four young, adult males[11] using the complete surface integration method.[1] We believe, however, that it is very important to carry out similar studies with cardiac patients before making a decision about the minimum number of electrodes required.

Summary

The Gabor-Nelson theory is applied to the development of practical vector lead systems. The method consists of summing potentials from horizontal rows of electrodes, and then summing vertically. The summations are carried out automatically by means of resistance networks.

The summations can be carried out using electrodes at equal distances along the x and z axes (Barber-Fischmann), or using electrodes equally-spaced around the thorax (Nelson). For a sufficient number of electrodes, both methods should yield identical results. Up to a certain point, the degree of accuracy achieved is a function of the toral number of electrodes used. A new lead system using 3 rows of 8 equally-spaced electrodes is discussed.

References

1. Gabor, D. and Nelson, C. V.: Determination of the resultant dipole of the heart from measurements on the body surface. J. Appl. Phys. 25, 413-416, 1954.
2. Barber, M. R. and Fischmann, E. J.: A lead system recording total outward cardiac dipole strength. Brit. Heart J. 23, 649-658, 1961.
3. Nelson, C. V.: Theoretical basis for a new vector lead system. Proc. 18th Ann. Conf. on Eng. in Med. and Biol. Philadelphia, Nov., 1965.
4. Schmitt, O. H. and Simonson, E.: The present status of vectorcardiography. A.M.A. Arch. Int. Med. 96, 574-590, 1955.
5. Brody, D. A.: A method for applying approximately ideal lead connections to homogeneous volume conductors of irregular shape. Am. Heart J. 53, 174-182, 1957.
6. Bayley, R. H.: The electric field produced by an eccentric dipole in a homogeneous circular conducting lamina. Circulation Res. 7, 272-276, 1959.
7. Nelson, C. V. and Gastonguay, P. R.: A definition for zero potential. Circulation Res. 7, 1039-1049, 1959.
8. Nelson, C. V. and Matsuoka, S.: The vertical component of the heart vector. Am. Heart J. 65, 774-788, 1963.
9. Bayley, R. H.: The application of boundary potentials to several electrocardiographic problems. Am. Heart J. 61, 684-691, 1961.
10. Fischmann, E. J. and Elliott, B. J.: Experimental comparison of "Parallel grid leads" with simple bipolar, and the SVEC-III, Frank, and McFee-Parungao systems. I: Sagittal leads. Am. Heart J. 67, 792-803, 1964. II: Transverse and vertical leads. Am. Heart J. 70, 627-637, 1965.
11. Nelson, C. V.: Determination of the resultant dipole moment of the heart in the human and animal. In Electrophysiology of the Heart, Oxford, Pergamon, 1965. B. Taccardi and G. Marchetti, eds.
12. Ellison, R. C., Fischmann, E. J., and Hugenholtz, P. G.: Evidence for a progressive increase of the heart's electromotive forces with body growth. Circulation 34, part III, 96, 1966.
13. McFee, R. and Johnston, F. D.: Electrocardiographic leads, III, Synthesis. Circulation 9, 868-880, 1954.

Plasma Tricarboxylic Acids in Salicylate Poisoning*

STANLEY DIENST, M.D.** and NANCY GREER, B.S.***

INTRODUCTION

The striking combination of hyperpyrexia, increased oxygen consumption, and metabolic acidosis which evolves in salicylate poisoning, has gained the attention of investigators out of proportion to its occurrence as a clinical problem. During the last ten years, the intracellular and, particularly, the mitochondrial effects[1,2] of salicylate have been studied and defined. The decreased efficiency of mitochondrial oxidative phosphorylation, or "uncoupling," has been implicated in the hyperpyrexia and increased oxygen consumption observed clinically.[3]

The origin of metabolic organic acidosis is more obscure. It has been generally attributed to either a "keto-acidosis" from the increased oxidation of fats or one possible result of the progressive extracellular buffering of respiratory alkalosis by glycolytic[4] and tricarboxylic[5] acids. Schwartz, R. and Landy have recently shown increases in the tricarboxylic acids excreted in the urine of salicylate poisoned patients.[6]

This present study measures tricarboxylic acids in the plasma of salicylate poisoned patients. There is a discussion of their final increase in the light of known inhibitory effects of salicylate on mitochondrial oxidation.

METHOD

The protein-free extract of plasma is neutralized, evaporated and applied as a sample to an acid silica gel column for the separation of tricarboxylic acids after the original method of Bulen, Varner, and Burrell,[7] as modified by Dienst and Morris.[8] Cross identification by paper chromatography is applied to column chromatography fractions of plasma acids from two of the patients.

PATIENTS

The patients were:

1. K.M., a two-and-a-half-year-old boy, admitted in a stuporous state twenty hours after ingestion of aspirin with a blood salicylate level of 59% (pH 7.12, CO_2 5.6 mM/L, pCO_2 16-1 mm Hg.).

2. P.H., a fifteen-year-old girl with salicylate overdose was posticta1, hyperthermic and had blood salicylate levels of 125 mg% at five hours and 89 mg% at fifteen hours when plasma organic acids were determined, (pH 7.62, CO_2 18.7 mM/L, pCO_2 18.1 mm Hg.).

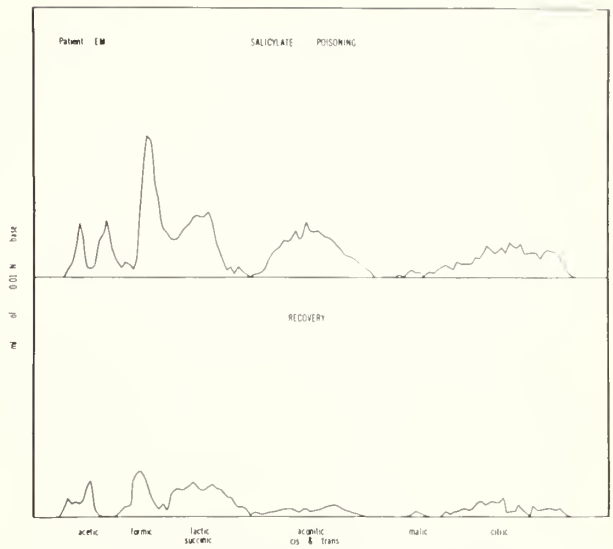


Fig. 1. The level of organic acids as depicted in chromatograms of plasma of patient (E.M.) during salicylate poisoning and after recovery.

3. E.M., an 81-year-old lady hypotensive, hypothermic (90°F), and progressively unresponsive was found to have a salicylate level of 67 mg% on the second hospital day, (pH 7.27, CO_2 11.3 mM/L, pCO_2 23.8 mm Hg.). The chromatography of her plasma organic acids during salicylate poisoning and after recovery are shown in Fig. 1.

RESULTS

Ten normal fasting controls had an average total organic acid level of 5.2 meq/L (S.D.±1.13 meq/L). The acids from the plasma of the salicylate poisoned patients were recovered in six peaks. The first peak was salicylic acid and is not shown in Fig. 1. The major components of the five subsequent peaks were confirmed by paper chromatography. Lactic acid was thus shown to be the major component of the lactic-succinic peak. Approximately equal quantities of malic and citric acids were present in the last peak by paper chromatography. In the paper chromatography of column fractions from patients no significant beta-hydroxybutyric acid could be identified although it was readily recovered as a standard. The tricarboxylic cycle acids which were elevated were citric, aconitic, and malic acids. Lactic acid was also increased.

DISCUSSION

In studying the acidosis of salicylate poisoning, the effect of hyperventilation from primary stimulation of the respiratory center must be considered. The finding

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***Maine Heart Association — Fellowship.

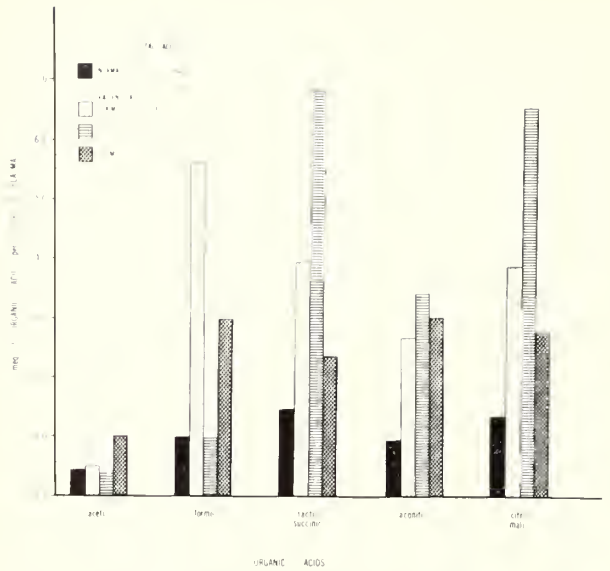


Fig. 2. A composite bar graph of the concentration of organic acids found in each patient compared to normal concentrations.

of small buffer base deficits in salicylate poisoned animals after one to four hours of hyperventilation have been reported.[9] However these deficits have generally been no greater than the total accumulation of lactic and pyruvic acids normally associated with hyperventilation.[4] In the poisoned animals as in animals with hyperventilation alone the accumulation of lactic and pyruvic acids can be prevented by controlling pCO_2 using four percent CO_2 in the respirator. To actually measure the cellular contribution to acidosis in salicylism independent of respiratory acid-base changes would require the controlling of pCO_2 in an animal for fifteen to twenty hours with the blood salicylate level maintained over 75 mg%. This is the level and duration of poisoning most frequently associated with metabolic acidosis in patients. Data from studies of this design are not available.

Sufficient information is available to hypothesize an inhibitory effect of salicylate on mitochondrial tricarboxylic acid oxidation as a factor in the final acidosis. Several mitochondrial effects have been demonstrated. The first is the well documented inhibition of phosphorylation of ADP. This inhibition is virtually complete at 28 mg% salicylate in isolated suspensions of rat liver mitochondria.[10] The second effect is the competitive inhibition of malic and isocitric acid dehydrogenases. The site of this inhibition is indicated in Fig. 3. By blocking the transfer of hydrogen ion from these tricarboxylic acids to mitochondrial coenzymes NAD and NADP,* the first step in tricarboxylic acid oxidation is inhibited. This would be an attractive mechanism to explain an increase in these acids. However the dehydrogenases are much less sensitive to salicylate than is phosphorylation. The rate of transfer in vitro is only decreased by 25% and 8.0% for malic and isocitric dehydrogenes respectively at 35 mg% salicylate.[2] (Intracellular levels only approach 60% of extracellular level as determined in the chronically poisoned animal.)[11]

*Nicatinamide Adenine Dinucleotide and its phosphate ester.

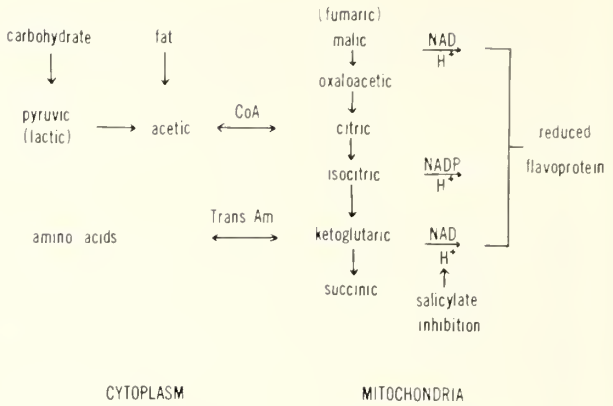


Fig. 3. This is a diagrammatic presentation of the major oxidative changes prior to the intramitochondrial electron transfer chain. One site of mitochondrial salicylate inhibition is indicated.

The total in vitro effect on tricarboxylic acid levels is indicated by a tracer study using ($1\text{-}4^{14}\text{-}C_2$) succinate as substrate for rat liver mitochondria. In these studies salicylate caused a marked increase in the incorporation of radioactive carbon from succinate into malic and citric acids when isolated from the final suspension. This indicated an accumulation of these acids.[2]

We offer the interpretation that in salicylate poisoning early organic acid increases are associated with hyperventilation and extracellular buffering, the hyperventilation being produced by direct stimulation of the respiratory center.[12] The later development of metabolic acidosis occurs secondary to intramitochondrial effects in all tissues. The delay is due to the time required for salicylate to reach sufficient mitochondrial concentrations. The most apparent factor to explain this delay is the initial binding of salicylate to cytoplasmic protein with a reduction in the effective diffusible portion that can enter mitochondria.

Summary

1. Chromatographic methods are used to demonstrate elevations of lactic, citric and malic acids in the plasma of three patients with salicylate poisoning.

2. The relationship of hyperventilation and organic acidosis in salicylate poisoning is discussed.

3. In vitro studies are described to support an hypothesis of primary salicylate effect on mitochondria as a factor in the production of metabolic acidosis.

References

1. Penniall, R.: The effects of salicylic acid on the respiratory activity of mitochondria. Biochem. Biophys. Acta, 30:247, 1958.
2. Bryant, C., Smith, M.J.H., and Hines, W.J.W.: Effects of salicylate and γ − resorcylate on the metabolism of radioactive succinate and fumarate on rat liver mitochondria and

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Factors for Calculation of Partial Pressure of Ammonia from pH and Total Ammonia

W. H. Austin, M.D.* and J. H. Phillips, Jr., M.D.**

Jacques et al[1] have pointed out that ammonia exists in the form of the ammonium ion and free ammonia. Free ammonia, which is a function of the partial pressure of ammonia (PNH_3), is freely diffusible and possibly plays a major role in producing hepatic coma. The effects of pH on PNH_3 have been demonstrated and it is of note that alkalosis, so frequently present in hepatic coma, produces an elevation of PNH_3.[2] Plasma or blood ammonia includes ammonia existing as an ion and dissolved gas. The latter is in equilibrium with the partial pressure of ammonia (PNH_3).

PNH_3 may be calculated using the following relationships:

$$NH_4^+ \rightleftarrows NH_3 + H^+$$

Expressed quantitatively:

$$H^+ = K'_a \frac{NH_4}{NH}$$

or

$$pH = pK'_a + \text{Log} \frac{NH_3}{NH_4^+}$$

Since NH_4^+ equals TNH_3 (total ammonia) minus NH_3 then,

$$pH = pK'_a + \text{Log} \frac{NH_3}{TNH_3 - NH_3}$$

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Table 1

Factors for Calculation of Partial Pressure of Ammonia from pH and Total Ammonia at 37°C (†)

pH	PNH_3* Factors		pH	PNH_3* Factors		pH	PNH_3* Factors	
	mEq/L^+_+	$\mu g\ \%$**		mEq/L^+_+	$\mu g\ \%$**		mEq/L^+_+	$\mu g\ \%$**
6.90	.55	770	7.20	.28	392	7.50	.14	196
1	.54	756	1	.27	378	1	.14	196
2	.52	728	2	.26	364	2	.13	182
3	.51	714	3	.26	364	3	.13	182
4	.50	700	4	.25	350	4	.13	182
5	.49	686	5	.25	350	5	.13	182
6	.48	672	6	.24	336	6	.12	168
7	.47	658	7	.24	336	7	.12	168
8	.45	630	8	.23	322	8	.12	168
9	.44	616	9	.22	308	9	.12	168
7.00	.43	602	7.30	.22	308	7.60	.11	154
1	.42	588	1	.21	294	1	.11	154
2	.42	588	2	.21	294	2	.11	154
3	.41	574	3	.21	294	3	.11	154
4	.40	560	4	.20	280	4	.10	140
5	.39	546	5	.20	280	5	.10	140
6	.38	532	6	.19	266	6	.10	140
7	.37	518	7	.19	266	7	.10	140
8	.36	504	8	.18	252	8	.09	126
9	.35	490	9	.18	252	9	.09	126
7.10	.35	490	7.40	.17	238	7.70	.09	126
1	.34	476	1	.17	238	1	.09	126
2	.33	462	2	.17	238	2	.09	126
3	.32	448	3	.16	224	3	.08	112
4	.32	448	4	.16	224	4	.08	112
5	.31	434	5	.16	224	5	.08	112
6	.30	420	6	.15	210	6	.08	112
7	.29	406	7	.15	210	7	.08	112
8	.29	406	8	.15	210	8	.08	112
9	.28	392	9	.14	196	9	.07	98

†Solubility Factor = .91, $K'_a = 9.49 \times 10^{-10}$ ‡

*$PNH_3 \times 10^{-4}$ = total ammonia (mEq/L or $\mu g\%$) / PNH_3 factor

‡Use when total ammonia is given in mEq/L

**Use when total ammonia is given in micrograms %

This equation may be rearranged as follows:

$$NH_3 = \frac{TNH_3}{[1 + \text{antilog } (pK'_a - pH)]}$$

Since PNH_3 is desired, the denominator must be multiplied by a solubility factor (S) derived from the solubility coefficient (.91L NH_3/L plasma STPD at a partial pressure of 1 mm Hg for ammonia at 37°).[3]

$$NH_3 = PNH_3 \cdot S$$

$$S = \frac{.91 \times 1000}{22.09} = 41.2 \text{ (mM/L/mm Hg}$$

(1000 is inserted to convert moles to millimoles)

Then $$PNH_3 = \frac{TNH_3}{[1 + \text{antilog } (pK'_a - pH)] \cdot S}$$

The entire operation may be simplified by calculating the denominator, $[1 + \text{antilog } (pK'_a - pH)] \cdot S$, for a variety of pHs and constructing a table of "PNH_3 factors." These factors may be divided into total ammonia to yield PNH_3. Such a table for pH 6.90 to 7.79 has been calculated using the pK'_a for ammonia in plasma[3] of 9.02. This pK'_a as pointed out by Bromberg et al, is probably closer to the true value for plasma than the commonly accepted figure of 9.13 or 9.15 which applies to whole blood.[4] The figure for total ammonia nitrogen in plasma may be expressed mEq/L or in microgram percent so two columns of values are provided to cover both situations. The resulting partial pressure of ammonia will be $PNH_3 \times 10^{-4}$. The use of these factors allows calculation of the partial pressure of ammonia by one simple mathematical operation. Hopefully this simplification will encourage more investigators to calculate PNH_3 and thereby shed more light on its true significance.

REFERENCES

1. Jacquez, J.A., J.W. Poppell, P. Vanamee, W. Lawrence and K.E. Roberts. The significance of the partial pressure of ammonia in ammonia toxicity. Clin Res. Proc. 5:20, 1957.
2. Lawrence, W., J.A. Jacquez, S.G. Dienst, J.W. Poppell, H.W. Randall and K.E. Roberts. The effects of changes in blood pH on the plasma total ammonia level. Surg. 42:50-60, 1957.
3. Jacquez, J.A., J.W. Poppell and R. Jeltsch. Solubility of ammonia in human plasma. J. Appl. Physiol. 14:255-258, 1959.
4. Bromberg, P.A., E.D. Robin and C.E. Forkner. The existence of ammonia in blood in vivo with observations on the significance of the NH_4+ - NH_3 system. Journ. Clin. Invest. 39:332-341, 1960.

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on dehydrogenase enzymes. Biochem. J. 86:391, 1963.
3. Smith, M.J.H.: Salicylates and metabolism. J. Pharm. and Pharmacol., 11:705, 1959.
4. Huckabee, W.E.: Abnormal resting blood lactate. Am. J. Med. 30:833, 1961.
5. Axelrod, D.R.: Organic acids and calcium in hyperventilation. J. Appl. Physio. 16:709, 1961.
6. Schwartz, R. and Landy, G.: Organic acid excretion in salicylate intoxication. J. of Pediatrics 66:658, 1965.
7. Bulen, W.A., Varner, J.E. and Burrell, R.C.: Separation of organic acids from plant tissues. Anal. Chem. 24:187, 1952.
8. Dienst, S.G. and Morris B.: Studies of uremia. J. of Maine Med. Asso. 57:2, 1966.
9. Eichenholz, A., Mulhausen, R.O., and Readleaf, P.S.: Nature of acid-base balance disturbance in salicylate intoxication. Metabolism, 12 (No. 2):164, 1963.
10. Brody, T.M.: Action of sodium salicylate and related compounds on tissue metabolism in vitro. J. Pharm. Exp. Ther., 117:39, 1956.
11. Charnock, J.S., Opit, L.J. and Hetzel, B.S.: An evaluation of the effect of salicylate on oxidative phosphorylation in rat liver mitochondria. Biochem. J. 83:602, 1962.
12. Tenney, S.M. and Miller, R.M.: The respiratory and circulatory actions of salicylate. American J. Med. 19:498, 1955.

High Resolution Acrylamide Gel Electrophoresis:

Some Practical Aspects of its Problems*

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During the last decade a considerable amount of effort has been directed toward the investigation of serum proteins by increasingly sensitive electrophoretic techniques. What had been a simple five fractions on paper and free electrophoresis has grown to a complex 50 bands in newer techniques.

Although all electrophoretic methods require careful execution, the new high resolution systems require meticulous attention to detail and are fraught with problems which may severely compromise the results obtained. The purpose of this paper is to direct attention to the causes for failure to obtain consistent excellent resolution in acrylamide gel techniques.

The theoretical and practical aspects of high resolution acrylamide gel electrophoresis have been dealt with elsewhere[1,2,3] and will not be dealt with in this paper. These techniques depend upon 1. arrangement or stacking of the different proteins along a pH gradient by the anodic progression of an ion front, 2. narrowing of the bands to a small fraction of their original width by the ability of the protein molecules to move more rapidly in the liquid or large pore gel than in the separation gel and 3. further sorting according to size and configuration by the sieving effect of the separation gel lattice.

With techniques which offer high degrees of resolution, operative precision is manditory. A great number of variables can grossly reduce the resolution of any electrophoretic system; the number of variables that require careful attention is directly proportional to the resolution of the method. Any deviation from ideal conditions results in loss of resolution.

To minimize such deviations the reasons for suboptimal resolution must be understood.

The causes of poor separation fall into several categories:

1. Overlapping of adjacent bands:
 - a. Insufficient difference of rfs† at given pH
 - b. Insufficient difference of rfs at given pore size
 - c. Broad application zone
 - d. Insufficient length of run (distance)
 - e. Diffusion
 - f. Distortion
 - g. Excess concentration of one or several proteins
 - h. Excess sample viscosity
 - i. Excess sample ionic strength
 - j. Use of old or improperly stored sera
2. Excessive heating
3. "Streaming" from origin
4. Halting of slow proteins by faster occluded species
5. Gel decay
6. Improper choice of buffer

Although the following remarks are directed toward the modified acrylamide gel system,[3] they also apply, in most instances to the Orthacryl[1] and Disc[2] techniques as well as to starch gels.[4]

1. a-b — The rf of two proteins at a given pH must be separated by a distance at least the width of the wider band. Regardless of the resolution of the system, if this condition is not met, separation of the two cannot be effected. Separation of a closely apposed pair may be accomplished by varying the pH or the pore size of the gel. The latter may be very simply adjusted by varying the amount of the acrylamide monomer added. Slight changes in the gel formulation will cause considerable variation in the final pattern and it is therefore necessary that the amounts of gel constituents be weighed out to within 1/10% of the chosen standard.

1. c — The "origin" in the acrylamide techniques is the point of entry into the separation gel. In the three acrylamide methods and in starch gels the broad sample zone is contracted to a fraction of its width before entry into the separation gel. To achieve maximum concentration of the protein bands before arrival at the "origin," the sample and/or the spacer gel must have a pH below 7.0 and an ionic strength of about 0.21. The height of the spacer gel should be at least equal to the height of the sample before electrophoresis to allow the boundary to overtake the proteins with low isoelectric points that progress to the anode even at pH 6.6.

1. d — Two fractions that are well resolved and closely apposed often appear as a single band until a considerable distance has been traversed. This is of concern in the Disc method where the total length of the pattern is about 3 centimeters. Bands which appear single in these short columns resolve into several in the method described here and visual and densitometric resolution increase up to the length of our runs (12-20cm).

Closely related to the above is the use of the smaller pore gels in the Disc method in which the fractions of the slow 1/3 of the pattern are so closely apposed that the best of densitometers are unable to resolve them.

The simplest answer is the use of larger pore gels[1]

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†The mobility factor (rf) is the product of the protein charge and the resistance encountered in the separation gel.

and longer runs which open up the pattern to allow photographic or densitometric resolvability.

1. e — Movement of a protein molecule by diffusion occurs simultaneously with electrophoretic displacement and, as with any molecule is related to solvent viscosity, temperature, time, molecular size and shape and the concentration of the material. For those proteins that are generally inhibited by the gel pore size, diffusion is nil. Those in the prealbumin to beta zone, however, whose sizes allow relatively free anodic movement, diffusion could have a real effect on the dimensions of the bands. We cannot agree with Ornstein that resolution and detectability decreases with run length.[5] If free diffusion of small protein molecules were to occur during electrophoresis, resolution would be compromised. Fine bands in the postalbumin area, however, have been measured to be only one millimeter wide after four hours of migration over a distance of 12 centimeters. This strongly suggests that diffusion is limited during electrophoresis and the slight broadening of the bands is more than offset by the separation effected.

Diffusion of protein occurs after termination of the run and before fixation within the gel matrix. Fixation of the bands with acetic acid of necessity allows the proteins in the center to diffuse passively for a longer period than those nearer the surface. This is more noticeable in the Disc columns (5mm) and in our slabs (7mm) and in the new Orthacryl chamber (6mm) than in the conventional slabs (3mm).

Improvement in results have been obtained by rapidly coagulating the proteins in 95°C 5% acetic acid as described under methods.[3] In certain sera, up to fourteen fractions have been resolved between albumin and transferrin.

1. f — By "distortion" is meant any deviation of the shape of a band from a flat smooth line disc or rectangle. This category contains the bulk of the troubles encountered in electrophoresis. For clarity these will be considered as to their site of difficulty; i.e., in the "application" or insertion phase or in separation.

In view of the fact that the liquid layer of protein within the sample pocket carries heat producing current, *convection* can occur resulting in swirling of the sample as illustrated in Fig. 1e. For this reason wattage must be kept at a level below which the heat-dissipating ability of the system is adequate and the viscosity of the sample will prevent swirling. Lowering of the ionic strength by dilution or dialysis increases the sample resistance further reducing the thermal agitation. We have reduced the wattage during the "application" phase to 40ma at 90 volts. Lorber[6] has used a similar low voltage phase. The Orthacryl system recommends using starting potentials of 300 volts which has consistently produced some distortion in our hands. By reducing the starting current to 40ma the application phase has been prolonged to one to two hours. If this step is neglected, however, resolution is severely impaired regardless of the care taken subsequently. Lateral diffusion during this portion of the run is unimportant as will be discussed later.

Distortion of the sample can be induced by *agitation* of the buffer tank during the early phase of the run, by either moving the chamber, pouring in buffer or by the use of a circulation pump. Although the Tris-Borate-EDTA[1] buffer will break down after several hours, at least two hours of unimpaired buffering can be obtained with an uncirculated 500ml tank. After the application phase is completed circulation can be instituted. The type of distortion that occurs is often not seen until destaining is complete and consists of small irregularities similar to those seen in fig. 1e. If agitation is more vigorous, major difficulties will occur. For this reason, it is recommended that the last step in the preparation should be the injection of the samples into the pockets after which the chamber is not moved or jarred until "application" is completed. At the end of this period circulation or manual exchange can be affected without inducing distortions. With the Tris-Glycine buffer described under REAGENTS[3] a single 500ml uncirculated tank will afford constant buffering for the entire run.

In the commercially available 3mm Orthacryl apparatus no support for the walls of the *sample pockets* are provided and they frequently collapse after the sample has been applied and the run started. The liquid protein is forced to the ends of the pockets and "dumbell" shaped bands are produced. This can be corrected by support of the pocket walls by either the wide trough as suggested by Lorber[6] or by the thick (3mm) walls used in our cell.[3] Bowing inward of the pocket sides as a result of expansion will occur if buffer at room temperature is poured into the cold chamber.

A more obvious type of distortion results from operation of the cell a few degrees from the vertical. The bands thus formed are wider on the dependant side.

A large number of difficulties can be caused by *inhomogeneities* in the gel slab or column. These are mainly due to variations in pore size and are the result of mechanical factors such as "bombing" of the gel during layering with water, ascent of bubbles during polymerization and inconsistencies in the rate of polymerization. In the large slabs of the conventional method as well as in ours, where the proteins move a considerable distance, such inconsistencies are of prime importance. Slabs cast at below 10°C are very prone to inhomogeneities and must be polymerized slowly. For this reason we have altered the gel formulation by the reduction of the amount of ammonium persulfate with consequent lengthening of polymerization to over five hours. In Fig. 1b, 1c, and 1f, are illustrated examples of distortions caused by gel inhomogeneities. In Fig. 1b distortion has been due to a bubble rising from below during polymerization. In Fig. 1c distortion is due to the variation in pore size in the spacer gel interface which effects only the larger protein species, while 1f illustrates a

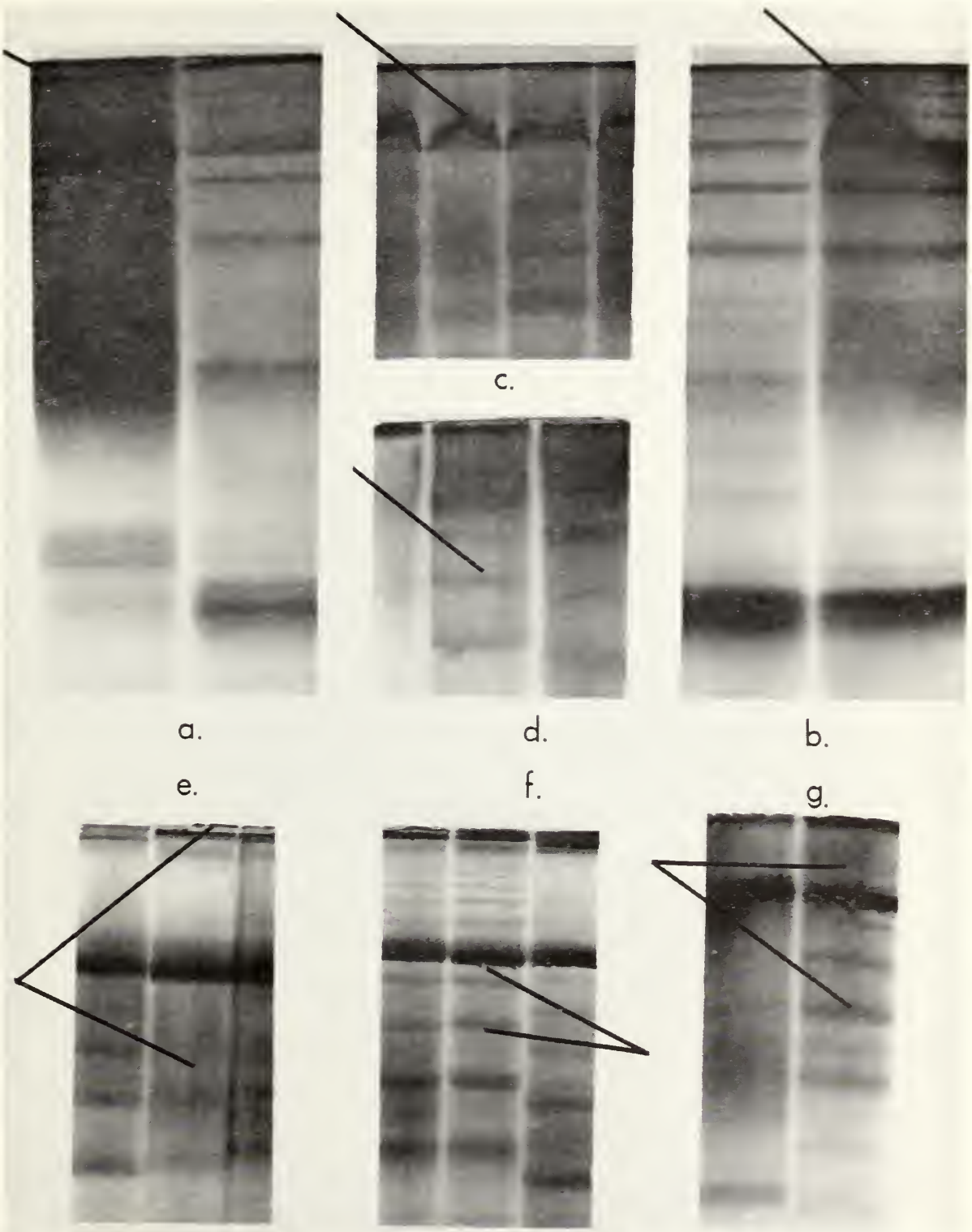


Fig. 1. Distortion artifacts in acrylamide gels. a. Slanting line at origin (arrow) due to layering of water from a single point, b. Distortion due to bubble rising during polymerization. Large molecular species most effected. c. Distortion due to irregular pore size at the interface (origin) or in spacer gel, d. Streaming of proteins from precipitates at the origin. e. Distortion due to agitation of the liquid sample layer, f. Distortion due to variation in pore size deep in gel slab (too rapid polymerization), g. Major distortions due to "bombing" of the gel interface during layering.
From Ritchie et al.: The Journal of Laboratory and Clinical Medicine 68:842, 1966, The C. V. Mosby Company, St. Louis.

variation in pore size which extends deep into the slab. It can be seen in 1f that the smaller, lower haptoglobin polymers have passed through the inhomogeneity without distortion while the larger ones have been effected.

Fig. 1g illustrates the result of "bombing" or accidental dropping of water on to the gel interface during layering. The distortions in the bands usually involve all fractions. To correct this the water layer should be carefully aspirated and the entire chamber contents poured off, mixed briefly and poured again. The small amount of water mixed in, will not be detectable. If the water layer is applied at one point on the meniscus and allowed to run across the interface, solutes will be washed away resulting in a change of pore size of the upper portion of the gel. This is illustrated in Fig. 1a as a sloping band (arrow) separating from the macroglobulin line at the interface. In the illustration, the water moved from left to right. The need for absolutely smooth layering with water cannot be stressed too firmly. If this step is faulty, resolution cannot be satisfactory.

In a similar fashion, the spacer gel may introduce distortion of an identical nature. In contrast, the distortions due to inhomogeneities in the small pore separation gel, only the very large proteins ($Mw. > 10^6$) are affected. These are the slow $alpha_2$-macroglobulin, the high haptoglobin 2-II polymers and the IgM immunoglobulins.

A prominent type of band distortion in the Disc method is the forward cupping of the bands. The majority of published photographs of such columns show this difficulty. As the length of the run is extended, curvature increased to the point where bands resemble nested cups with resultant destruction of resolution. In some of our early experiments using rectangular cells this distortion was marked and occurred in both planes within the cell. We have investigated the cupping from a variety of standpoints and have discarded the following as causes: potassium ferricyanide, pH, gel constituents, cleanliness of the cell, cleaning solutions, type of protein, chamber materials (glass or plastic), temperature gradients, buffers, endosmosis and surface effects. Curvature was eliminated by the isolation of the protein molecules from contact with the chamber walls by 3mm thick pocket walls. Applying the samples in pockets as in the Orthacryl method an insulating wall only one millimeter thick is present. This is insufficient to prevent concentrated proteins from reaching the chamber wall by diffusion. By increasing the thickness to 3mm on each side of the one millimeter thick pocket proteins do not reach the surface of the slabs even after a 20cm run. The reduction in cupping as evidenced by the narrowing of bands and the clearing of interband areas improved the densitometric tracings.

There is some disagreement about the value and function of the spacer gel. The stacking process as described by Ornstein[2] occurs in the liquid sample phase in both Raymond's and Smithies' techniques, as well as in the sample and spacer gels of the Disc method. We feel that the spacer gel as used in the present system has two other functions beside the stacking and narrowing of the protein species. One is the removal of precipitates, and lipids by preventing their progression to the origin and the other is the "healing" of the front, so that slight irregularities that might have occurred in the liquid phase are corrected or minimized. Despite rapid and efficient application of the samples, the protein is exposed to the pocket walls for at least one-half hour during "application." If the pocket is made in 5% gel as in the Orthacryl method the molecules that have diffused into the walls will be retarded during electrophoresis and will induce cupping and trailing. If the pockets are formed of 2.4% spacer gel, however, molecules that have diffused into the walls will be able to migrate with the same speed as those in the liquid phase and will enter the separation gel as a flat layer.

1. g – As has been stated earlier, high concentrations of a single protein will result in a broad dense band which may overlie adjacent bands or fuse with them. This is of considerable importance when dealing with myeloma sera where a single abnormal fraction may account for 40% of the total proteins. The sample should be run as different sample sizes to obtain resolution of the abnormal as well as the normal proteins.

1. h – The interaction of one protein species with another may give rise to poor resolution and artifacts that can only be corrected by dilution. This interaction is of particular importance when high concentrations of asymmetric proteins such as the immunoglobulins are present. Such viscous samples may require over six-fold dilution to minimize this problem. Karo, sucrose or acrylamide in excess concentration will induce the same phenomenon.

1. i – Concentrated buffers usually produce poorly resolved patterns. Certain high molarity buffers, however, may produce desired effects in some cases such as in the addition of large quantities of borate to improve the albumin and postalbumin zone.[7] In general localized improvement in resolution is acquired in one area at the cost of sharpness in others. The Tris-Glycine buffer gives the best all around results.

Samples containing large amounts of salts also produce unsatisfactory results. We have found that the reduction of the ionic strength to 0.03 – 0.05 yields superior resolution. This can easily be attained by dilution of the sample with Density Solution or by dialysis.

1. j – The best patterns are obtained from fresh sera that have not been frozen or manipulated and that have not been allowed to stay on the clot for more than 1 hour. This is often impractical and if samples are quickly separated and frozen at –20°C results are almost indistinguishable from the fresh material. With time, the faint bands in the alpha and immediate post-transferrin area fade and become smudged.

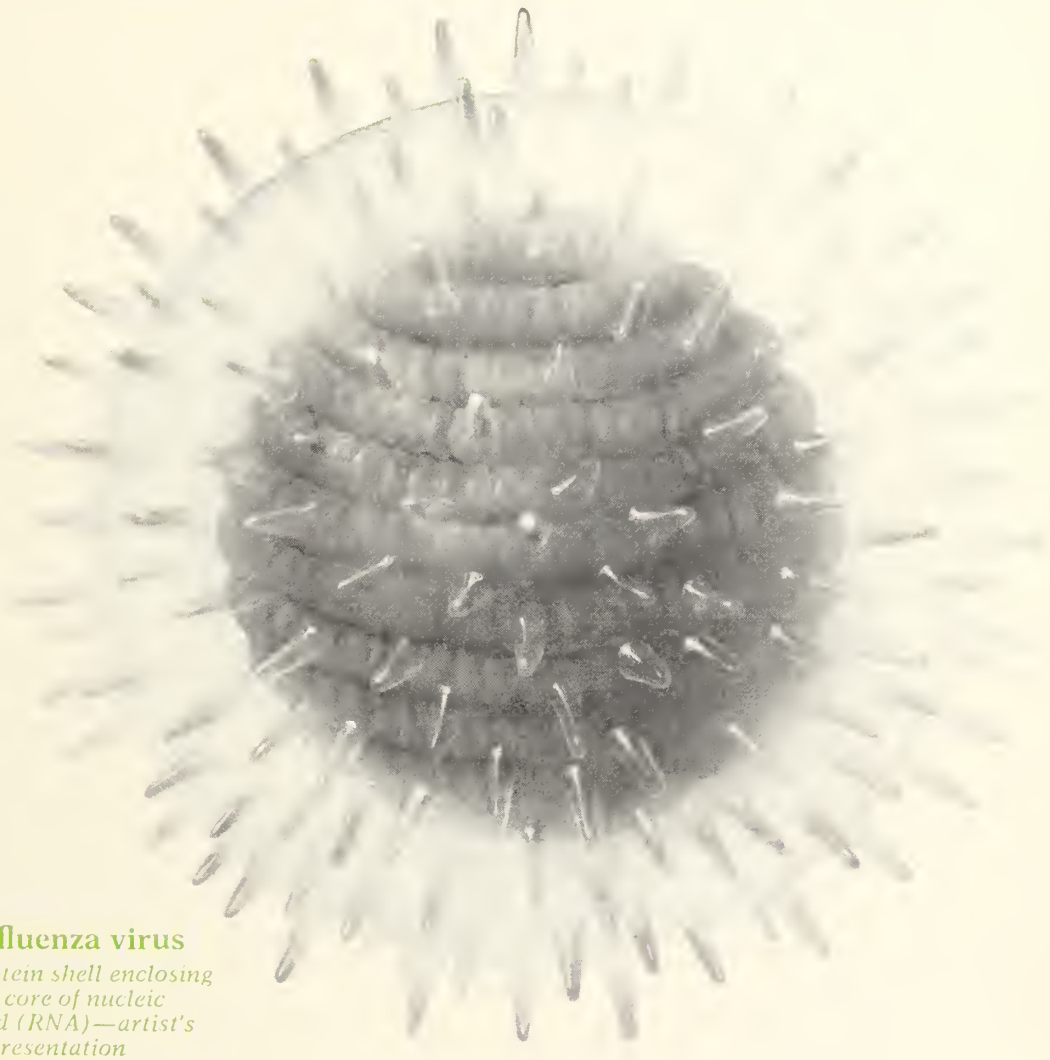
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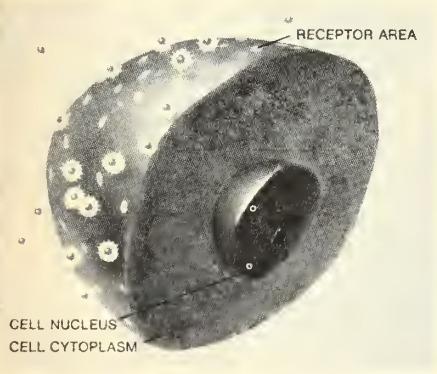
...may be particularly useful during outbreaks or epidemics and for high-risk patients in whom the occurrence of influenza A_2 is especially hazardous.

...a high degree of safety in clinical use.

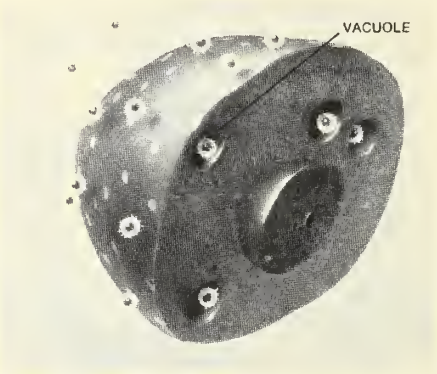
...simple once daily or b.i.d. dosage.

The mode of action of Symmetrel®

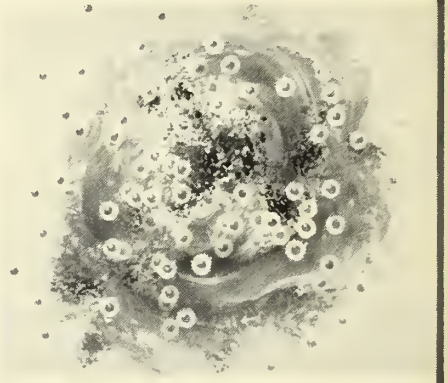
How the influenza virus invades and destroys the untreated cell



1 Viruses outside the cell attach themselves to specific cell receptor areas

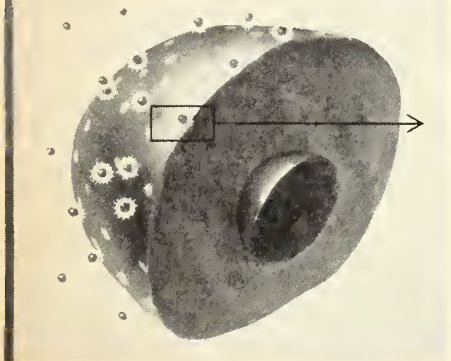


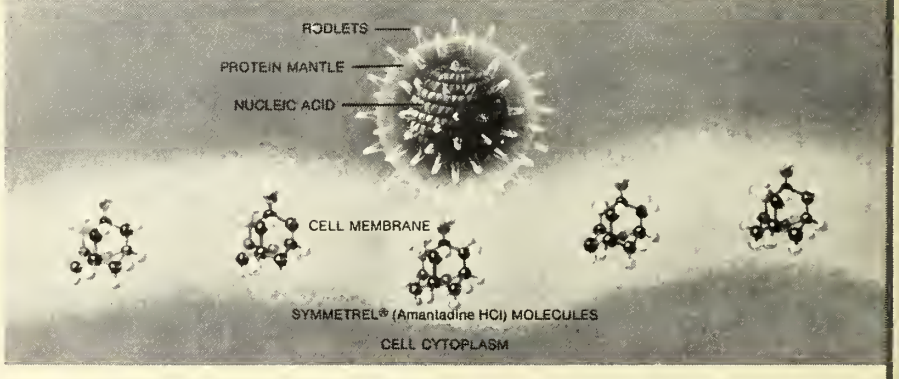
2 The virus is incorporated into a vacuole within the cell. From this vacuole the virus nucleic acid passes into the cell cytoplasm



3 The virus nucleic acid then directs the cell to produce both new virus nucleic acid and virus protein coat material which aggregate to form new virus particles. This process leads to the release of new virus particles and eventual destruction of the cell

How Symmetrel® (Amantadine HCl) prevents virus invasion[1]





Our current knowledge leads us to believe "Symmetrel" acts as a molecular barrier to influenza virus penetration. Shown here in a greatly enlarged section, "Symmetrel"—located at the cellular membrane—effectively prevents (blocks) virus penetration. Thus, "Symmetrel" does not directly destroy the virus particle but acting as a virostat prevents the cycle of virus penetration, virus replication, and cell destruction that is characteristic of virus invasion of animal cells (tissue). *Artist's conception based on current scientific knowledge.*

1. "Mode of Action of the Antiviral Activity of Amantadine in Tissue Culture", Hoffmann, C. E.; Neumayer, E. M.; Hall, R. F.; and Goldsby, R. A., Journal of Bacteriology *90*,623 (1965).

Safety of Symmetrel® Confirmed. When used as indicated, is generally well tolerated. No kidney, liver, bone marrow, or hematological disturbances have been observed.

Prescribing Information

Indications: "Symmetrel" is indicated for the prevention (prophylaxis) of influenza A_2 in persons of all age groups. Early use is recommended, preferably before or as soon as possible after actual or suspected contact with individuals suffering from influenza A_2. "Symmetrel" should especially be considered for high influenza-risk patient groups such as those suffering from chronic debilitating diseases and elderly persons.

Contraindications: Not indicated for the prevention of influenzal or respiratory illness other than influenza A_2 or for the treatment of established disease.

Warnings: Administration to patients with central nervous system disease, particularly geriatric patients with cerebral arteriosclerosis, and patients with a history of epilepsy or other "seizures," requires strict observation for possible untoward effects (see Adverse Reactions). Patients taking psychopharmacologic drugs, central nervous system stimulants, or alcoholic beverages should be observed for possible evidence of intolerance. Those patients who experience central nervous system effects or blurring of vision should be cautioned against driving or working in situations where alertness is important.

No teratogenic effects have been seen in reproductive studies in rats and rabbits. Studies in pregnant women have, however, not been done and use of this drug in women of childbearing age should be undertaken only after weighing the possible risks to the fetus against benefit to the pregnant patient. It should not be administered to nursing mothers since it is not known whether the drug is secreted in the milk.

Precautions: Ineffective against bacterial infections. Patients should be observed for idiosyncratic reactions as with all new drugs. Geriatric patients with pre-existing serious medical illnesses with mental or physical deterioration should be followed carefully medically while taking "Symmetrel." (See Adverse Reactions.)

Adverse Reactions: With higher than indicated doses manifestations of central nervous system effects such as nervousness, insomnia, dizziness, lightheadedness, drunken feeling, slurred speech, ataxia, inability to concentrate and some psychic reactions including depression and feelings of detachment were seen. Occasional blurred vision was reported at higher doses. Some of the milder and less pronounced symptoms above have been reported in a small number of patients taking the recommended dosage of 200 mg per day. Those were mostly transient and disappeared with continued administration of the drug. Some geriatric patients developed paranoid or hallucinatory behavior and became unmanageable while taking 200 mg daily. Medically unselected seriously deteriorated geriatric patients showed poor clinical tolerance after several weeks of daily dosing with 200 mg per day. One elderly patient with a history of prior cerebrovascular accident developed visual hallucinations and grand-mal convulsions while on drug at 800 mg per day. Some cases of dry mouth, gastrointestinal upset and skin rash and rarely, tremors, anorexia, pollakiuria, and nocturia have been also reported.

Safety: When used as indicated, is generally well tolerated. No kidney, liver, bone marrow, or hematological disturbances have been observed.

Dosage: *Adults:* Two 100 mg capsules (or 4 teaspoonfuls of syrup) as a single daily dose or the daily dose may be divided into one capsule of 100 mg (or 2 teaspoonfuls of syrup) twice a day.

Children: 1 yr.—9 yrs. of age: Calculate total daily dose on the basis of 2 mg to 4 mg per pound of body weight per day (but not to exceed 150 mg per day). Daily dose, given as the syrup, should be given in 2 or 3 equal portions.

9 yrs.—12 yrs. of age: Total daily dose 200 mg given as one capsule of 100 mg (or 2 teaspoonfuls of syrup) twice a day.

How Supplied: *Capsules:* Bottles of 100. Each red, gelatin capsule contains 100 mg amantadine HCl.
Syrup: Bottles of 1 pint. Each 5 ml (1 teaspoonful) contains 50 mg amantadine HCl.

DUPONT

Symmetrel®

(Amantadine HCl)

A molecular barrier to virus penetration

arrest diarrhea

in • gastroenteritis • acute infections



LOMOTIL®

Each tablet and each 5 cc. of liquid contains:

diphenoxylate hydrochloride 2.5 mg.

(Warning: May be habit forming)

atropine sulfate 0.025 mg.

Effectiveness: Lomotil possesses a unique degree of effectiveness in both acute and chronic diarrhea.

Convenience: Lomotil is supplied as small, easily carried, easily swallowed tablets and as a pleasant, fruit-flavored liquid.

Versatility: The therapeutic efficiency, safety and convenience of Lomotil may be used to advantage alone or as adjunctive therapy in diarrhea associated with:

- **Ulcerative colitis**
- **Acute infections**
- **Irritable bowel**
- **Regional enteritis**
- **Drug therapy**
- **Food Poisoning**
- **Functional hypermotility**
- **Malabsorption syndrome**
- **Ileostomy**
- **Gastroenteritis and colitis**

Dosage: For correct therapeutic effect—Rx correct therapeutic dosage. The recommended initial daily dosages, given in divided doses, until diarrhea is controlled, are:

Children: Age	Total Daily Lomotil Dosage	Lomotil Liquid Dosage (Each teaspoonful [4 cc.] contains 2 mg. of diphenoxylate HCl)
3-6 months	3 mg.	½ tsp. 3 times daily
6-12 months	4 mg.	½ tsp. 4 times daily
1-2 years	5 mg.	½ tsp. 5 times daily
2-5 years	6 mg.	1 tsp. 3 times daily
5-8 years	8 mg.	1 tsp. 4 times daily
8-12 years	10 mg.	1 tsp. 5 times daily

Adults: 20 mg. (2 tsp. 5 times daily or 2 tablets 4 times daily) Based on 4 cc. per teaspoonful. Maintenance dosage may be as low as one-fourth the initial daily dose.

Precautions: Lomotil, brand of diphenoxylate hydrochloride with atropine sulfate, is a Federally exempt narcotic preparation of very low addictive potential. Recommended dosages should not be exceeded. Lomotil should be kept out of reach of children since accidental overdosage may cause severe respiratory depression. Lomotil should be used with caution in patients with impaired liver function and in patients taking addicting drugs or barbiturates. The subtherapeutic amount of atropine is added to discourage deliberate overdosage.

Side Effects: Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness, insomnia, numbness of extremities, headache, blurring of vision, swelling of the gums, euphoria, depression and general malaise.



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DEMETHYLCHLORTETRACYCLINE
is effective b.i.d.



It's made for b.i.d.

Effective in a wide range of everyday infections — respiratory, urinary tract and others — in the young and aged — the acutely or chronically ill — when the offending organisms are tetracycline-sensitive.

Contraindication — History of hypersensitivity to demethylchlortetracycline.

Warning — In renal impairment, usual doses may lead to excessive systemic accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort.

Precautions and Side Effects — Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. Use of demethylchlortetracycline during tooth development (last trimester of pregnancy, neonatal period and early childhood) may cause discoloration of the teeth (yellow-grey-brownish). This effect occurs mostly during long-term use but has also been observed in short treatment courses. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment. Side reactions include glossitis, stomatitis, proctitis, nausea, diarrhea, vaginitis and dermatitis. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy. Anaphylactoid reactions have been reported.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products.

Capsules: 150 mg; *Tablets:* film coated, 300 mg, 150 mg, and 75 mg of demethylchlortetracycline HCl.

LEDERLE LABORATORIES, A Division of American Cyanamid Company, Pearl River, New York

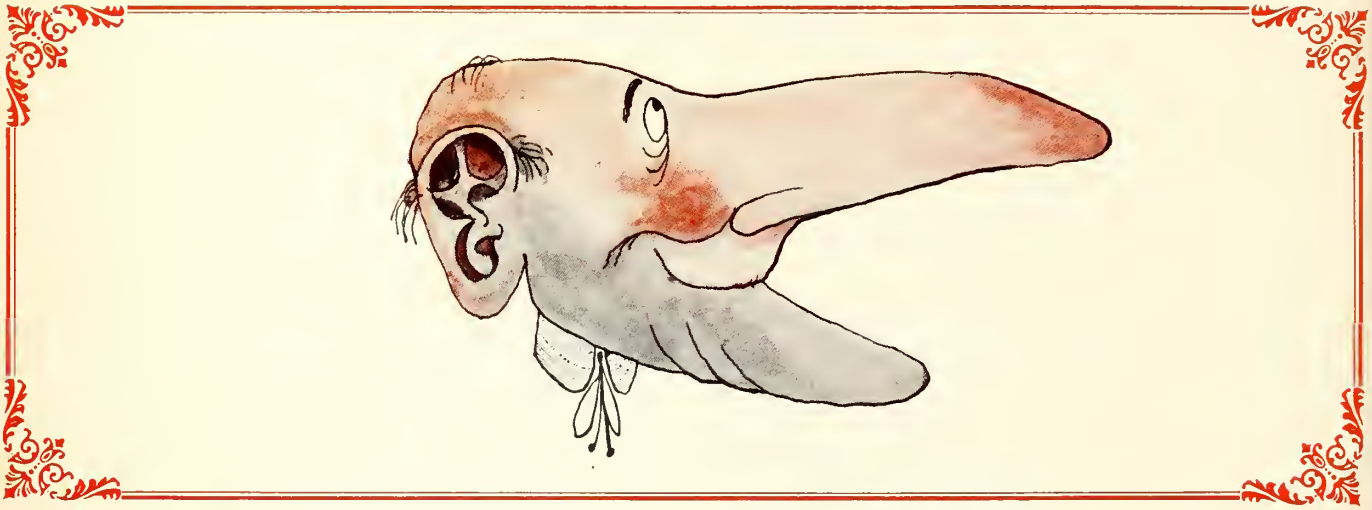
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■ side effects are minimal

INDICATION: Nasal congestion. CONTRAINDICATION: Do not use in patients sensitive to small doses of sympathomimetic substances. WARNINGS: Prolonged or excessive use may cause rebound congestion. Use cautiously in patients with hyperthyroidism, coronary artery disease, hypertension, and diabetes. CAUTION: Do not shake Nasal Spray. Rinse Nasal Solution dropper or Nasal Spray tip in hot water after each use. No more than one person should use the same dropper bottle or nasal spray.
SIDE EFFECTS: Occasional local reactions: rebound congestion, slight burning or stinging, sneezing, dry nose. Occasional systemic effects: headache, drowsiness, lightheadedness, insomnia, palpitations. Overdosage in young children may produce profound sedation.
DOSAGE: **Adults:** *Nasal Solution*—2 or 3 drops in each nostril every 4 to 6 hours. *Nasal Spray*—Squeeze rapidly once or twice in each nostril every 4 to 6 hours. **Children under 12:** *Pediatric Nasal Solution*—2 or 3 drops in each nostril every 4 to 6 hours. One drop should be used in infants under 6 months. *Pediatric Nasal Spray*—Squeeze rapidly once in each nostril holding tube upright; repeat every 4 hours as necessary. SUPPLIED: OTRIVIN® hydrochloride (xylometazoline hydrochloride CIBA) *Nasal Solution*, 0.1%; dropper bottles of 1 fluidounce, bottles of 1 pint. *Nasal Spray*, 0.1%; plastic squeeze tubes of 15 ml. *Pediatric Nasal Solution*, 0.05%; dropper bottles of 1 fluidounce. *Pediatric Nasal Spray*, 0.05%; plastic squeeze tubes of 15 ml. *Nasal Solutions* contain either 0.1% or 0.05% xylometazoline hydrochloride, triethanolamine, hydrochloric acid, sodium chloride, and phenylmercuric acetate 1:50,000 as preservative in water. *Nasal Sprays* contain either 0.1% or 0.05% xylometazoline hydrochloride, potassium phosphate monobasic, potassium chloride, sodium phosphate dibasic, sodium chloride, and benzalkonium chloride 1:5000 as preservative in water. *Consult complete literature before prescribing.*
CIBA Pharmaceutical Company, Summit, N. J.

CIBA

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2. – Moderate heating will cause little difficulty with the exception of the expansion of the slab. If the internal temperature of the gel rises above 40°C, however, (which may occur rapidly if the flow of coolant is interrupted) Certain proteins will coagulate and move no further. The myeloma proteins are particularly sensitive to temperatures of this order. The bands of heat-sensitive material will become very distorted with some of the material continuing to move for a while. Slower less labile fractions will then pile up against these proteins. Although some proteins are very heat labile, albumin has been observed to move well at temperatures above 60°C. A study of the effects of temperature on resolution will be discussed elsewhere.[8]

3. – Streaming of proteins from the origin in an irregular manner is not seen in the Disc method, but is prominent in the Orthacryl technique being most marked in those sera containing large quantities of gamma globulin. This is probably due to the gradual release of soluble occluded material. This phenomenon can often be observed as a dark streak originating from a visible particle of precipitate at the origin (Fig. 1d). The released material moves into the gel, but cannot catch up to its respective band, their rates of migration being identical. When such precipitates are halted by a relatively acid spacer gel and where the progression of the protein stacks is being retarded by the advancing boundry the released proteins have the opportunity to catch up with their respective bands before entering the separation gel. Further minimizing of this phenomenon can be accomplished by prior centrifugation and removal of the precipitates. Equally important is the removal of the lipid layer at the top of the sample. Both these separations are common in stored area and the use of fresh fasting specimens is ideal, although, often impractical.

4. – A phenomenon not previously described is the blockade of the lower gel/spacer gel interface with large quantities of non-penetrating macroglobin. In serum, most proteins of molecular weights over 10^6 migrate in the alpha-2 and gamma-1 area and precede the bulk of the 7S immunoglobulins. The result is that in those sera with large amounts of these proteins, the origin becomes occluded and the slower, but smaller molecules are prevented from migrating beyond, giving a false impression of low 7S immunoglobulin levels. This is most marked in the sera of patients with Waldenstoms macroglobulinemia. The phenomenon appears to be minimized by the use of the large pore 5.0% gels. A tailored spacer gel which will retard macromolecules or prevent their migration can also be used.

5. – Albumin piles up against the dye front if the "pre-run" in the Orthacryl method is omitted or if there has been decay in the gel solutions. The prepared commercial Disc reagents were found to be unsatisfactory due to unpredicatability of the runs. If fresh solutions were made up immediately before pouring, no difficulty was encountered. The polymerized gels are stable for 2-3 days only. The major cause for decay of the stored solutions has been the breakdown of TEMED or DMAPN.

Summary

Difficulties encountered with electrophoretic techniques occur even in the hands of experienced personnel. Some of the more common causes for suboptimal resolution, particularly in the new high resolution system, have been discussed. Practical recommendations for their avoidance have been included.

References

1. Raymond, S., Weinstraub, L.: Acrylamide Gel as a Supporting Medium for Electrophoresis, Science 130:711, 1959.
2. Davis, B. J., Ornstein, L. A.: A New High Resolution Electrophoresis Method, Presented at the Society for The Study of Blood, March 24, 1959.
3. Ritchie, R. F., Harter, J. G., Bayles, T. B.: Refinements Of Acrylamide Electrophoretic Techniques, J. Lab. and Clin. Med., 68: 842, Nov. 1966.
4. Smithies, O.: Zone Electrophoresis in Starch: Group Variations in Serum Proteins of Normal Adults, Biochem. J. 61:629, 1955.
5. Ornstein, L. A.: Disc Electrophoresis – 1, Background and Theory, Ann. N.Y. Acad. Sci. 121:321, 1964.
6. Lorber, A.: Increased Globulin Fractionation by an Improved Vertical Gel Electrophoresis Technique, J. Lab. & Clin. Med. 64:133, 1964.
7. Peacock, A. C., Bunting, L. S., Queen, K. C.: Serum Protein Electrophoresis in Acrylamide Gel: Patterns from Normal Human Subjects, Science, 147:3663, 1451, 1965.
8. Ritchie, R. F.: High Resolution Acrylamide Gel Electrophoresis: The Effects of Temperature, In Preparation.

The Effects of Drowning on Acid-Base Balance†

William H. Austin, M.D.,* Bobby J. Stinebaugh, M.D.,** Peter W. Rand, M.D.*** and Eleanor Lacombe, M.T. (ASCP)****

Swann and his associates have described the acid-base changes which occur in the dog drowned in fresh and in sea water.[1,2,3] They concluded that the general pattern of changes was similar regardless of the drowning media. Their studies were performed by introducing the drowning fluid with a face mask in the unanesthetized animal. This resulted in breath holding and muscular activity which obscured the physiologic effect of aspiration alone.

Our study compares the effect of different drowning fluids on acid-base balance in animals in whom struggling was minimized by pentobarbital and breath holding eliminated by introducing the fluid directly into the trachea. The results demonstrate distinct patterns associated with fresh water, sea water, and isotonic saline. While these studies do not pretend to reproduce the actual events which occur during drowning, they do clarify the physiologic processes involved by isolating the changes due to the presence of fluid in the lungs.

Methods

Mongrel dogs were anesthetized with sodium pentobarbital, 30 mg/kg body weight, and were intubated with an endotracheal tube. The drowning fluid was introduced from a height of 30 cm and allowed to flow by gravity. The level of the fluid was kept at this height. Three animals each were drowned in deionized water, sea water with an osmolality of 900, and isotonic sodium chloride. Three animals were asphyxiated by clamping the endotracheal tube. Arterial blood was drawn in the control period and at 30 seconds, 1 minute, 2 minutes, 3½ and 5 minutes after the introduction of the drowning media. They were analyzed for pH, pCO_2, and pO_2. The pH was measured with a Beckman Model 1019 Research pH meter employing a capillary glass electrode thermostated at 37.5°C and a temperature controlled liquid junction. The pCO_2 was measured with an IL pCO_2 electrode and a Vibron Electrometer Model 33 B. The measuring techniques used and method of calculation of bicarbonate have been described elsewhere.[4] Serum electrolyte measurements were made in some cases, and the serum osmolality and protein values were determined as described in another paper.[5] In order to clarify the time relationships in the movement of electrolyte and water, two additional animals were drowned in the fashion described above, one using a sodium sulfate solution with an osmolality of 865 and the other a mannitol solution with an osmolality of 820.

Results

The changes in acid-base balance are presented in Fig. 1. These are plotted in conjunction with the changes in osmolality. In the fresh water animals, the pCO_2 and bicarbonate fell almost immediately and remained below control values. In the sea water animals there were prompt elevations in the pCO_2 and bicarbonate which were more than could be accounted for on the basis of CO_2 retention alone. Except for slight differences in the bicarbonate levels the changes in the isotonic drowning and asphyxia studies are similar. Although the bicarbonate and pCO_2 changes in the sea water group are of greater magnitude than in the isotonic and asphyxia group the pH is similar in all studies since it is a function of the ratio of HCO_3 and pCO_2 (H_2CO_3). Fig. 2 compares the results in sea water, hypertonic sodium sulfate and mannitol. In the sea water study, sodium and chloride rose and remained elevated while the osmolality increased. In the sodium sulfate animal, the increase in sodium and osmolality is sustained while the chloride decreases. In the mannitol animal, the osmolality remains elevated but the sodium and the chloride begin to fall at approximately 1 minute.

Discussion

Swann concluded that the changes in acid-base balance with different types of drowning were similar. He based his statements on studies of animals who were unanesthetized, struggling and had masks placed over their faces.[2] It is apparent from his data that there was considerable breath holding prior to the time water actually entered the lung,[1] since no changes in plasma protein concentration occurred until 2-3 minutes following the introduction of H_2O into the face mask. Had water entered the lungs immediately, there would have been a rapid decrease in plasma proteins in the fresh water animal. Other work by us[5] demonstrates that changes in water content began to occur within 20 seconds after the introduction of water.

This breath holding, which introduced an element of asphyxia, preceding the drowning, was associated

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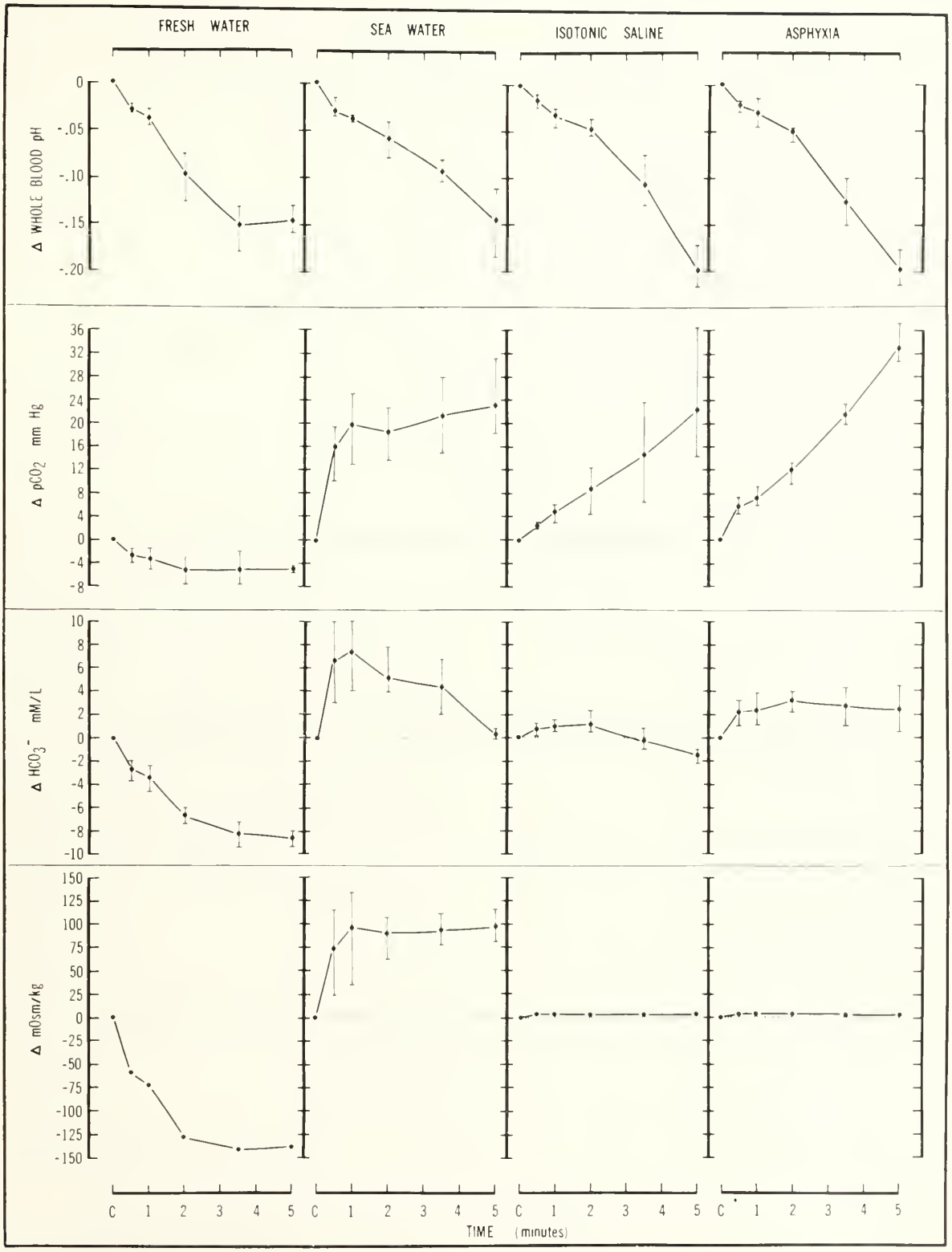


Fig. 1. Acid-base and osmolality changes during drowning. Range is indicated by a vertical line through each point. Osmolality was measured in only one animal of the fresh water, isotonic saline and asphyxia groups as this parameter was studied in detail elsewhere.[5]

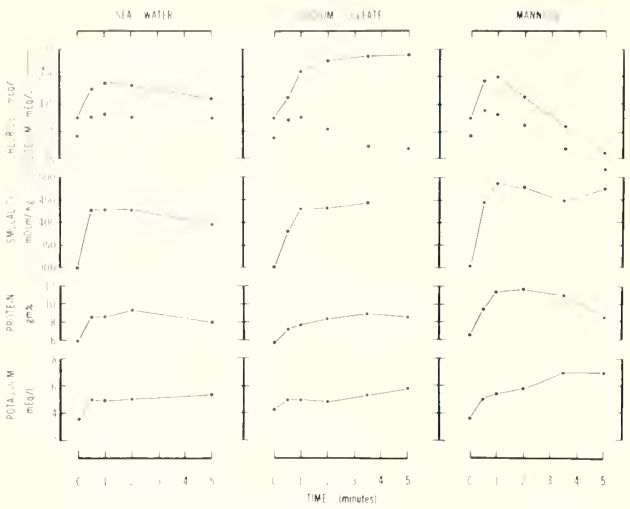


Fig. 2. Electrolyte and protein changes in sea water, hypertonic sodium sulfate and hypertonic mannitol drownings (see text for explanation).

with a rising pCO_2 and bicarbonate. Further difference in the two studies are related to the fact that Swann's animals probably had an increase in CO_2 production secondary to struggling.

In fresh water drowning there is an immediate drop in both pCO_2 and bicarbonate. These changes are due to dilution and are paralleled by the decrease in osmolality. It is possible that anoxic acidosis contributes to the depression of the bicarbonate in the latter part of the study.

In sea water drowning there is a rapid rise in the bicarbonate and pCO_2 early in the experiment and a gradual decrease in bicarbonate throughout the rest of the study. The immediate rise in bicarbonate appears to be due to plasma volume contraction caused by the rapid loss of water from the blood. The subsequent fall in bicarbonate may partially be accounted for by diffusion of this ion into the lungs. Evidence for these mechanisms is presented in Fig. 2 which shows the effects of sea water, hypertonic sodium sulfate and hypertonic mannitol on the potassium, sodium, chloride and protein values in blood and helps to elucidate the nature of the fluid and electrolyte shifts which occur during hypertonic drowning.

With the infusion of each of these hypertonic media there is a rise in the first 30 seconds in all electrolytes* and protein. In the animals drowned in sodium sulfate solution, (osmolality 865) the rise in sodium continues while the chloride begins to fall (after one minute). In the hypertonic mannitol drowning, (osmolality 820) both the sodium and chloride rise, then begin to fall after the first minute. These studies suggest that there is an immediate contraction phenomenon followed by a period of equilibration of solutes between plasma and lung fluid. Since sodium sulfate and mannitol contain no chloride, there is a fall in chloride due to diffusion of this ion into the lung fluid after the initial contraction phase. The bicarbonate is presumably affected in a similar fashion. Further evidence for the diffusion of bicarbonate into the lung fluid towards the end of the studies is the finding of bicarbonate concentration of approximately 12 mM per liter in the alveolar lung samples. It is also possible that some of the bicarbonate diffuses into the interstitial spaces.[6]

In addition, we have postulated that some of the bicarbonate elevation is related to a displacement of bicarbonate (with chloride) from the red cell (the chloride shift). Support for this thesis is gained from *in vitro* studies in our laboratory in which hypertonic saline and whole blood were mixed on a volume for volume basis. Measurements before and after revealed there to be a 15 to 20% increase in the total extracellular bicarbonate in solution.

The increase in the pCO_2 is proportional to the increase in bicarbonate resulting in a pH change which is very similar to that seen in the asphyxia and the isotonic drowning studies. This is the type of change which would occur if water were removed from a biological system leaving behind most of the bicarbonate and dissolved CO_2. Part of the elevation of the pCO_2 and bicarbonate must also be attributed to retention of CO_2 by obstruction of the air passages with fluid. Finally a metabolic acidosis may contribute to the decrease in bicarbonate seen at the end of the study.

In isotonic drowning, the pH changes are similar to those in sea water and asphyxia. The pattern of increase in the pCO_2 is like that seen in asphyxia and undoubtedly is almost entirely due to CO_2 retention. The bicarbonate rises, then falls in the latter minutes of the study. This fall is attributed to the diffusion of bicarbonate into the lung fluid and to a metabolic acidosis.

In the *asphyxia* experiments, the changes are much like those described in human studies.[7,8] The rapid rise in the pCO_2 and bicarbonate is due to CO_2 retention. It is of note that the bicarbonate remains above the control levels for the entire experimental period. This represents a difference from the isotonic animals and is due to the fact that there is no lung fluid into which the bicarbonate may diffuse. There appears to be a metabolic component occurring in the last two minutes of this study causing a slight drop in the bicarbonate.

Summary

The acid-base changes occurring in fresh water, sea water, isotonic saline drowning and in asphyxia are compared. In the animals drowned in fresh water, there is an immediate drop in the pCO_2 and bicarbonate largely due to dilution. In the hypertonic drownings,

*The potassium changes after the initial contraction phase are secondary to pH and sodium alterations in addition to the factors discussed above.

there is an initial rise in the bicarbonate and the pCO_2 related to plasma volume contraction and possibly to a red cell shift of bicarbonate. This is followed by a fall in bicarbonate primarily due to diffusion into the lung fluid. In the isotonic drownings, the changes are very similar to those which occur in asphyxia. In all animals, part of the picture may be due to an anoxic acidosis particularly in the latter part of each study.

References

1. Swann, H. G. and Brucer, M.: The cardiorespiratory and biochemical events during rapid anoxic death. Texas Reports Biology and Medicine 7:604, 1949.
2. Swann, H. G., Brucer, M., and Vezien, B. L.: Fresh water and sea water drowning: A study of the terminal cardiac and biochemical events. Texas Reports Biology and Medicine 5:423, 1947.
3. Swann, H. G. and Spafford, N. R.: Body salt and water changes during fresh and sea water drowning. Texas Reports Biology and Medicine 9:356, 1951.
4. Austin, W. H.: Acid-Base balance: A review of current approaches and techniques. Am. Heart J. 69:691, 1965.
5. Rand, P. W., Lacombe, E., Austin, W. H. and Stinebaugh, B. J.: The effects of drowning on blood viscosity. (Submitted).
6. Brown, E. B., Jr., and Clancy, R. L.: In vivo and in vitro CO_2 blood buffer curves. J. Appl. Physiol. 20:885, 1965.
7. Eger, E. I. and Severinghaus, J. W.: The rate of rise of $PAco_2$ in the apneic anesthetized patient. Anesthesiology 22:419, 1961.
8. Gordon, G. F., Craig, R. G. and Search, R. L.: Effects of apnea on blood acid-base parameters. Anesthesiology 24: 118, 1963.

The Effects of Drowning on Blood Viscosity†

Peter W. Rand, M.D.,* Eleanor Lacombe, M.T. (ASCP),** William H. Austin, M.D.*** and Bobby J. Stinebaugh, M.D.****

While anoxia is of prime importance in the mechanism of death by drowning, factors related to the tonicity of the aspirated fluid also have been shown to have an important influence on the fatal sequence of events. Because of the large area of dialyzing surface presented by the alveoli, rapid exchanges of water and electrolyte may take place between plasma and the drowning fluid. The physiologic consequences of these movements have been investigated by Swann and his colleagues,[1,2,3,4] who have demonstrated that fresh water drowning produces marked hemodilution, usually accompanied by early ventricular fibrillation, while salt water drowning is associated with an equally severe degree of hemoconcentration and a relative delay in disturbance of cardiac rhythm.

Recent studies in this laboratory[5] have shown that levels of plasma osmolality outside the isotonic range are associated with changes in blood viscosity. Below 260 mOsm/Kg, red cells swell, hematocrit increases slightly, but viscosity falls. Above 340 mOsm/Kg, crenation occurs; and, although hematocrit falls, viscosity rises. Further work[6] has suggested that the untoward hemodynamic responses to angiocardiographic procedures may be caused, in part, by the rise in blood viscosity in response to these rapidly injected hypertonic compounds.

In view of these findings, a series of experiments was performed to investigate the effects of various types of drowning on blood viscosity and related factors.

Materials And Methods

Thirteen mongrel dogs between 10 and 18 kg were used. Following anesthesia with 30 mg/kg sodium pentobarbital, each animal was intubated with a cuffed endotracheal tube. Catheters were advanced via the femoral vessels and the right external jugular vein for pressure measurements in the right atrium, right ventricle and thoracic aorta. A large polyethylene cannula was inserted in retrograde fashion in the carotid artery for blood sampling. Intravenous heparin, 3 mg/kg, was used to prevent clotting. All glassware was siliconized.

Drowning fluids were freely infused into the endotracheal tube from a height of 30 cm. The animals were grouped according to the type of drowning media employed as fellows: fresh water – 3, sea water – 3, isotonic saline – 2. Pertinent values for these fluids are given in Table I. In 3 other dogs the same studies were performed during acute asphyxia produced either by clamping the endotracheal tube or by forced respirations with pure nitrogen.

Measurements included hematocrit, hemoglobin, whole blood viscosity, water content, protein, osmolality, plasma viscosity, sodium, chloride and potassium. Osmolality, electrolytes and volume were also measured in the various test solutions and in whatever fluid could

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TABLE 1

Solution	*Origin*	*Osmolality (mOsm/kg)*	*Sodium (mEq/L)*	*Chloride (mEq/L)*	*Potassium (mEq/L)*
Fresh water	Demineralized tap water	0	0	0	0
Sea water	Casco Bay, Maine	879	435	466	9.4
Isotonic Saline	Sodium Chloride Injection, U.S.P. (Abbott)	287	154	154	0

be retrieved from the lungs by drainage after drowning.

Whole blood viscosity was measured with a Brookfield micro cone-plate viscometer† at 37°C following the method of Rand, Lacombe, Hunt and Austin.[7] Although all samples were measured at 6 rates of shear between 212 and 5 inverse seconds, for the sake of simplicity, only those readings obtained at 106 inverse seconds have been presented. Since hematocrit is by far the most important determinant of blood viscosity, the observed values have been plotted in conjunction with normal values[7] at the hematocrit of each sample.

The viscosity of plasma, a non-Newtonian fluid at 37°C.[5] was measured at that temperature with Ostwald capillary-tube viscometers. Plasma water content (grams water per 100 grams plasma) was measured gravimetrically following desication. Osmolalities were measured cryoscopically with a Fiske osmometer*; sodium and potassium values were obtained with an internal lithium-standard flame photometer.** The biuret method was used to determine total protein levels, and the method of Schales and Schales[9] was used for chloride concentrations.

RESULTS

Within each group all animals responded alike, with minor differences in the magnitude of changes. Data from representative studies have been plotted in Fig. 1.

Group 1: *Fresh water* – In all animals the endotracheal infusion of deionized water produced, within 30 seconds, an increase in plasma water content, a drastic reduction of osmolality (to 220 mOsm/kg), and a drop in the electrolyte concentrations. Plasma protein determinations were not done in this group because of the marked degree of hemolysis which occurred.

Despite this evidence for hemodilution, a slight rise in hematocrit was noted. This fact, taken in conjunction with the observed decrease in hemoglobin concentration, points to a concomitant increase in red cell size. In each case whole blood viscosity values were considerably reduced below levels expected for the hematocrits produced. Plasma viscosity also fell, but the changes in this parameter were slight (no greater than 0.18 centistokes).

Although osmolality, sodium and chloride values continued to fall until the time of death, it is interesting to note that potassium concentration, after an initial drop within the first 30 seconds, rose to hyperkalemic levels. This finding, which has been mentioned by Swann,[4] was noted in all groups of this study.

Group 2: *Sea Water* – Within 30 seconds of the introduction of this highly hypertonic fluid the carotid samples reflected marked desiccation of the blood. Plasma osmolality reached 400-450 mOsm/kg; plasma proteins, electrolytes, and viscosity all rose; water content fell sharply, and both hemoglobin and hematocrit were increased. Since the rise in hemoglobin was proportionately greater than the rise in hematocrit, a decrease in red cell size was indicated. These changes were accompanied by extreme elevations of blood viscosity in all animals; centipoise values remained high throughout each experiment.

Group 3: *Isotonic Saline* – In these animals neither significant nor consistent changes occurred in any of the factors measured. With no change in osmolality, the volume and hydration of the red cells were unaltered; with no change in plasma water or protein, plasma viscosity remained constant. Blood viscosity values did not vary from those expected in normal blood of the same hematocrit.

Group 4: *Acute Asphyxia* – Simple deprivation of oxygen produced findings similar to isotonic drowning. A late rise in hematocrit will be noted in the asphyxia and isotonic examples. This increase in erythrocyte concentration occurred to some extent in approximately one-half of all animals studied and seemed to correlate with respiratory effort. We assume that it resulted from splenic contraction. In any event, the rise is paralleled by the hemoglobin concentrations, and there are again no important discrepancies between observed and expected blood viscosity values.

Pressure Studies – No consistent patterns of pressure response were noted in any group, except for the obvious eventual decline in aortic pressure. The design of the experiment introduced potential sources of error in pressure recording, however. Unfortunately, it was not feasible to catheterize other areas of particular interest such as the pulmonary arteries, pulmonary veins or left atrium.

Electrocardiographic monitoring revealed ventricular fibrillation to occur in all animals drowned with fresh water within 3 minutes 45 seconds of its introduction. Ventricular fibrillation or asystole was not noted within

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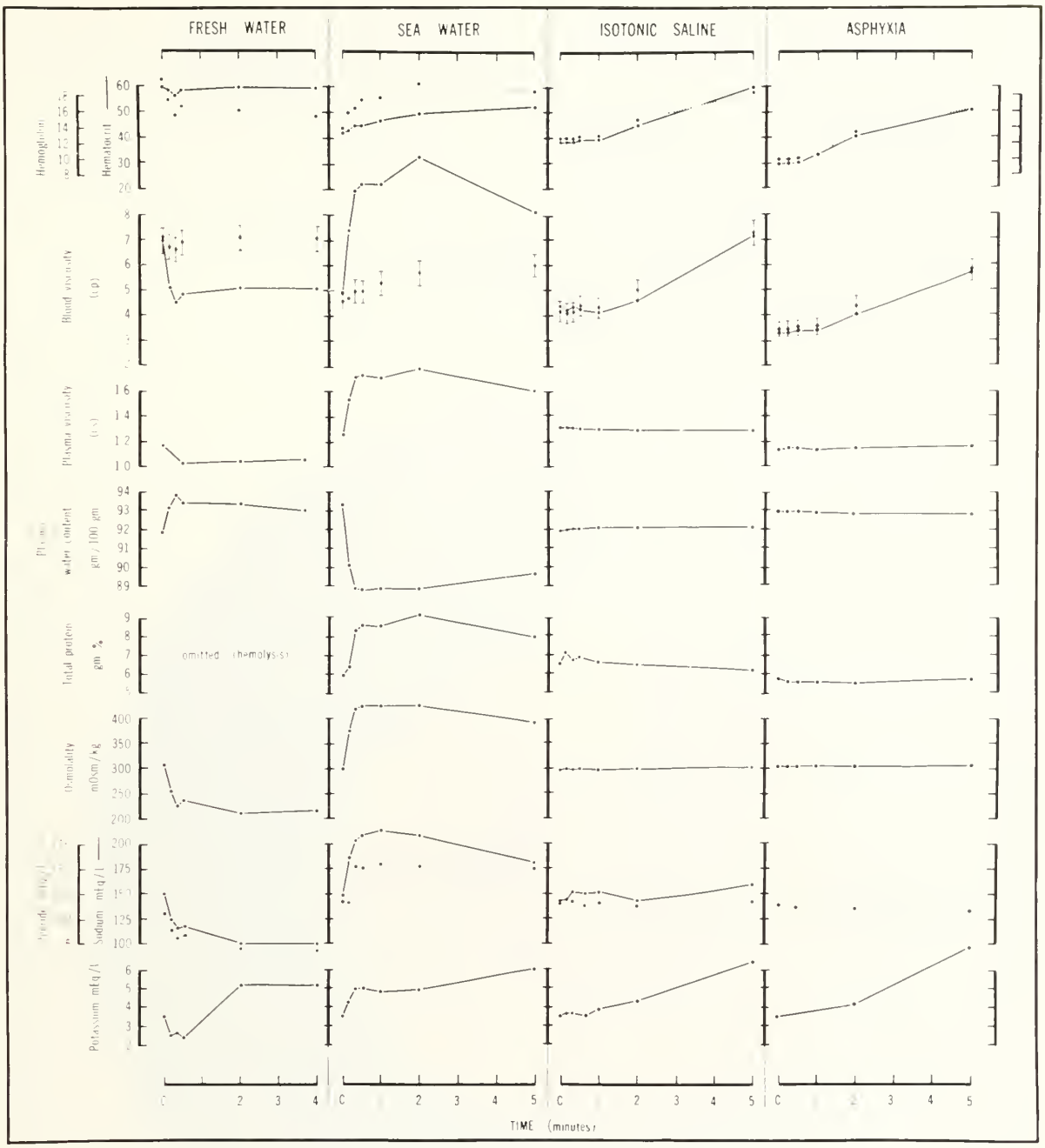


Fig. 1. Hematocrit and hemoglobin values are plotted together (hct/hgb: 50/16) to demonstrate the comparative effects of each experiment on red cell size. On the blood viscosity graphs the dotted lines indicate values found in normal blood at each hematocrit. One standard deviation is indicated by the vertical lines at each point. Blood viscosity, measured at 106 sec^{-1} and 37°C, is expressed in centipoise (dyne - sec x 100), while plasma viscosity (37°C) is expressed in centistrokes (centipoise/density).

the first 5 minutes in any of the other experimental groups.

Tracheal Aspirate – The volume of fluid recovered from the endotracheal tube at the end of each experiment was indicative of what had transpired within the lungs during each type of drowning. One hundred ml of lung fluid was the largest amount returned after an initial infusion of 750 ml fresh water, whereas a great deal more fluid usually was recovered than administered to dogs in the sea water group. In the isotonic group approximately 450 ml of the original 750 ml could be obtained.

Discussion

At any given combination of hematocrit, temperature, and shear rate, the fluid properties of whole blood

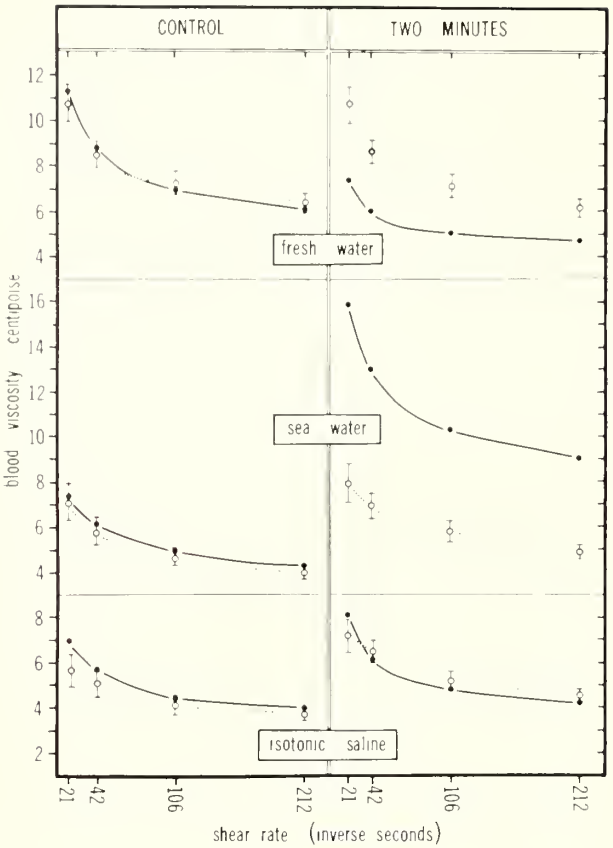


Fig. 2. Viscosity-shear- rate relationships derived from samples drawn before and during drowning with 3 types of fluids. Normal viscosity values are represented by the dotted curves. Vertical lines encompass one standard deviation. Note that although fresh and salt water cause marked and opposite changes in viscosity at each shear rate, they do not produce significant changes in the shapes of the curves.

are influenced by both red cell and plasma factors. For the erythrocyte these include size,[10] shape,[5] external cohesiveness[11] and internal viscosity;[12,13] and, for plasma, water content, the relative concentrations of proteins[14] and osmolality.[5]

Although it has been found that in the natural state larger red cells may be associated with higher levels of blood viscosity,[10] our work with hypotonic dilutions has shown, at least in human and dog blood, that when erythrocyte size is increased osmotically this relationship is reversed.[5] In this situation blood viscosity drops, apparently as a result of a fall in plasma viscosity produced by dilution of the plasma proteins. Responses similar to those which follow hypotonic dilution *in vitro* were found in arterial blood drawn from animals whose lungs were flooded with fresh water. Despite evidence for an increase in red cell size, blood viscosity dropped well below expected levels.

When plasma is made hypertonic, on the other hand, the viscosity of whole blood *in vitro* rises, but this effect is seen only when solutes are employed which do not readily cross the erythrocyte membrane.[5] Replacement of a small amount of plasma with hypertonic saline or mannitol, for instance, will produce a marked increase in the viscosity of whole blood. Similar replacement with hypertonic urea, however, will actually cause blood viscosity to fall as a result of dilution of the plasma and the cells with a solution of relatively low viscosity. The controlling factor in the hypertonic viscosity rise is crenation of the red cells. Changes in plasma protein concentration and viscosity play a much less important role here than they do in influencing blood viscosity in isotonic or hypotonic situations.

Although osmotically induced crenation is accompanied by a marked hematocrit drop *in vitro*, in the present study animals drowned in sea water failed to show hematocrit reductions despite plasma osmolalities as high as 450 mOsm/kg. Concomitant hemoconcentration (plasma water being drawn into the alveoli) and, perhaps in part, the autoinfusion of cells from the spleen acted to maintain the volume percentage of red cells. In view of persistent osmolality levels above 400 mOsm/kg, however, a significant degree of crenation must have occurred.

The extremely high levels of blood viscosity seen in dogs drowned in sea water may be explained, therefore, on the basis of a combination of factors including crenation, increased red cell concentration, increased plasma protein concentration and an elevation of plasma viscosity.

The lack of viscous changes, other than those appropriate for variation in hematocrit, in the anoxia studies, indicates that the mechanics of the experiment or the deprivation of oxygen by itself did not affect results in the other groups. Since blood viscosity also was unaffected by the presence of isotonic saline in the lungs, one must conclude that the changes noted in the fresh and sea water studies were solely the result of osmotically induced fluid shifts across the alveolar membrane.

A concept basic to knowledge of the flow properties of blood is the fact that viscosity increases in exponential fashion as velocity gradients decrease. Although the implications of this property in terms of perfusion of the microcirculation remain theoretical, it is important to examine the relationships of shear-rate to viscosity in all samples, particularly those which have undergone definite changes in respect to the physical properties of the suspending plasma.

These relationships have been plotted (Fig. 2) using data from the examples depicted in Fig. 1. Although the curves demonstrate the degree to which blood viscosity is increased at low shear rates, they fail to show any significant changes in slope which could be said to be characteristic of dilution with hypotonic or hypertonic fluids. This information is in agreement with the results of our *in vitro* studies which showed no significant influence on viscosity-shear rate curves as a result of osmotic changes in the size or shape of red cells.

Parallel shifts in plasma osmolality, sodium and chloride, and reciprocal changes in water content reflect

Continued on Page 27

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this issue: the nose as a shock organ

the nose as a shock organ

by Charles J. Shagoury, M.D., Chelmsford, Massachusetts



"Is it a cold, hay fever, or has he been reprimanded by his boss?" Occasionally, you will ask yourself this question when confronted by a patient with abrupt onset of rhinorrhea, nasal obstruction, and sneezing. Usually the history will elucidate the problem, but examination of the nose will often provide valuable clues to the correct diagnosis.

The nose is a shock organ in a double sense. First, it is in the nose that the confrontation takes place with the surrounding atmosphere. For twenty-four hours a day, the nose must meet the varying challenges of the inspired air, containing perhaps noxious chemicals, dust, dirt, bacteria, viruses, fungi, and industrial pollutants of all kinds, and render it clean, virtually sterile, and fit for the sensitive alveoli of the lungs. Whatever the temperature or humidity of the atmosphere, the nose must transmit it to the lungs at approximately 98°F, and with a humidity of approximately 40%.[1]

Second, in particularly susceptible patients, the nose acts as a shock organ in a manner totally unrelated to its normal function. Persons with hay fever respond to ordinarily harmless materials by extreme nasal congestion, with marked rhinorrhea and violent spasms of sneezing. In some patients, exposure to threatening or disagreeable agents, or situations involving mental conflict may result in a reaction which is exclusively nasal, with swelling of the turbinates, and marked hypersecretion.[2]

Nasal symptoms usually result when the nose seeks to perform its function of getting rid of noxious and dangerous elements in the atmosphere, and prevent their admission to the trachea and lungs. Small particles are removed by the mucous coating which blankets the nasal passages. This mucous blanket contains a bacteriostatic agent, lysozyme, which destroys most air-borne bacteria.[3] The mucinous content renders the surface sticky, causing dusts and small particles to adhere. It has been postulated that this process is rendered more effective through adsorption because of a surface electrical charge on the nasal mucosa.[4] The cilia then sweep the particulate matter to the pharynx. The nose can prevent entrance into the lungs of particles as small as three microns in diameter, but smaller particles elude the nasal barrier. Most bacteria causing respiratory infections are one to three microns in diameter, but since they usually are inhaled in clumps, they are efficiently removed as a rule. Viruses, which are of the order of 1/1000 of this size, are less efficiently dealt with, unless they occur in very large aggregates.[5]

The nose will react in a more or less similar manner, whatever the nature of the offending agent, whether it be an irritant chemical, virus, pollen, or distasteful emotional situation. In acute coryza, the most characteristic sign is a profuse watery discharge. The volume of secretion may rise from practically nothing to nearly 60cc in twenty-four hours.[6] The mucous membrane is reddened and engorged, while the turbinates are markedly swollen. After the first day or two, the secretion becomes thicker, yellowish, and more difficult to expel. The surface cells are largely destroyed, contributing to the copious discharge, which now also contains numerous inflammatory cells which have migrated to the area. Gradually, over a period of a few days, or a week, the flood abates, the swelling and redness subside, and the nasal epithelium resumes a healthy appearance.

Repeated attacks of rhinitis, particularly if there is an underlying element of obstruction, may result in chronic rhinitis. The mucous membrane is constantly swollen and reddened. Sticky, mucopurulent secretions are a continuous feature, and the glandular elements are hypertrophied. Commonly, the mucosal surface takes on an irregular, rounded "mulberry" appearance, and nasal passages are occluded by the swollen turbinates and redundant mucosa.

While all of us are susceptible to colds, the victim of hay fever, or allergic rhinitis, displays a marked nasal reaction to materials in the air which leave his associates unaffected. In such a patient, the nasal mucosa has become an allergic "shock" organ. Contact with the nasal allergen causes local release of histamine, with vasodilatation, increased vascular permeability, and severe nasal congestion, similar to the "wheal" and "flare" reactions in the skin, when the epidermis is the allergic shock organ. While we eagerly await the coming of spring, the hay fever sufferer dreads the blooming season, whose invisible pollens are poisons to his sensitive nose. His neighbor's cat or dog may provoke paroxysms of uncontrollable sneezing. In some cases a specific allergen is not identified, but the triad of rhinorrhea, nasal obstruction, and sneezing is present.[7] The nose in these cases shows a pale, boggy, edematous mucosa, with a thin mucoid secretion. The mucous membrane shows extreme retractility to 1% cocaine or ephedrine. If the patient has medicated himself prior to examination, the nasal passages may appear abnormally patent, or show exaggerated congestion due to rebound reaction. The secretion may show a large number of eosinophils particularly after an attack of sneezing or rhinorrhea. Touching the mucosal surface, especially of the inferior turbinate, leaves an indentation, showing that the swelling is due to stasis and edema, rather than actual hyperplasia of the mucous membrane as in chronic hypertrophic rhinitis. Though the pale swollen mucosa is the hallmark of allergic rhinitis, as usually seen by the physician, exposure of allergic subjects to their known allergens results in a brief hyperemic phase, followed by pallor and edema.[8]

In the later stages of allergic rhinitis, the chronic edema of the mucous membrane results in the formation of polyps, clusters of grape-like masses hanging from the roof of the nose, with a pale glistening surface, contributing significantly to the sense of nasal obstruction and oppression.

A large group of patients show symptoms of nasal congestion when confronted by adverse life situations.[9] In these unfortunate persons, anxiety, frustration, and resentment are often accompanied by a runny nose and nasal obstruction. Lacrimation adds to the nasal stuffiness. This autonomic response, mediated by the parasympathetic nervous system, may be part of a general parasympathetic reaction, or may possibly represent in part, a symbolic effort to wash out and crowd out the offending situation.

Nasal congestion may also occur in some patients at times of sexual stimulation, and in women during menstruation and pregnancy, even to the point of epistaxis.[10] The relationship is obscure; castration results in atrophy of the nasal glands, and their action is inhibited by the hormones of the hypophysis and the thyroid.[11] The nose may be the shock organ in drug therapy. The nose may also bear the brunt of industrial stress, in those who work in a hot dry atmosphere, or those exposed to acid fumes, or irritating dusts. As the air in our cities is increasingly polluted by exhaust fumes, and industrial irritants, whole urban populations may suffer from chronic nasal and respiratory symptoms.

Of course, nasal reactions are not just infectious, or allergic, or emotional. Particularly in the chronic sufferers, there is an interdependence of all three. Death of a relative, or other psychic shock can pre-

(concluded on following page)

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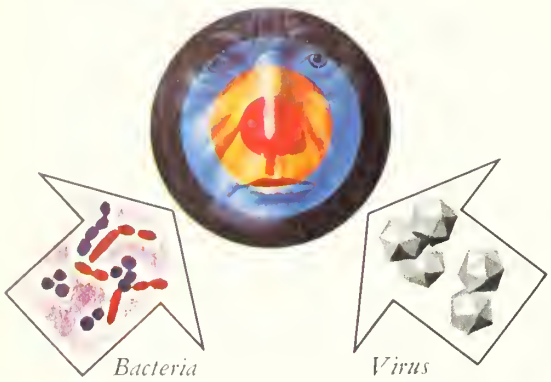
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cipitate an attack of rhinorrhea in hay fever sufferers.[12] Others develop attacks of vasomotor rhinitis following change in temperature, chilling, or exposure to the sun, or simply warm bedclothes.

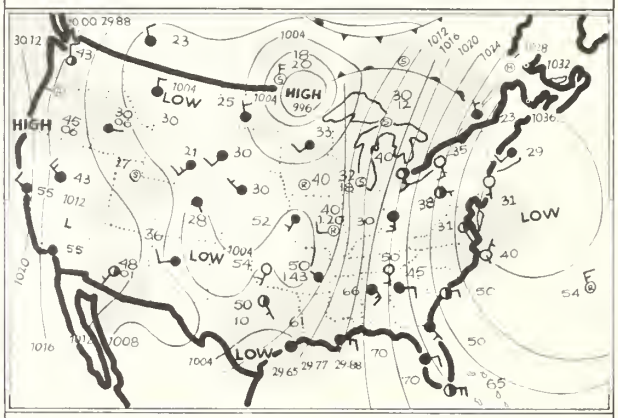


The complex interplay of allergy and infection is largely unclear. Allergy to the viruses and bacteria which cause infection has been postulated, but is difficult to demonstrate. The swollen obstructed allergic nose is more susceptible to infection. At the same time, infection often precedes or precipitates an allergic attack. Exposure of a susceptible patient to an allergen can activate latent virus organisms leading to infection.[13] This "jolt" reaction represents a summation of an allergen and a virus leading to symptoms in the nose as a shock organ, which neither could have produced alone. In childhood, repeated attacks of bronchitis and colds may be inflammatory reactions to an allergen, or precipitated by exposure to an allergen. These children may later develop typical allergic rhinitis. On the other hand, children with typical allergic histories, eczema, asthma, and allergic familial backgrounds, may later develop typical infectious rhinopathies. Skin tests in such patients are usually positive.

Nasal reactions are part of the systemic response of the patient to an unwelcome stimulus. In cases of respiratory infection and exposure to atmospheric irritants, the reactions are useful, and to some extent desirable. They are usually self-limited, disappearing within a few days, or upon removal of the provoking agent. Here the distressing symptoms can be ameliorated with appropriate decongestant agents, or, in the case of severe or complicated respiratory infections,antibiotics may be given, with reasonable confidence of a cure. On the other hand, when nasal reactions are the peculiar response of an individual to an allergen, or to an undesirable situation, they serve no useful purpose. The nose here is a shock organ in a stressful situation, but can furnish no response of value. It merely causes the patient symptoms which add to his problems. In these cases, symptomatic treatment is of great benefit, but often the underlying faulty pattern of response cannot be altered. Such a patient may literally be considered to be paying his way in life "through the nose."

References 1. Maures, E. R., Mendez, F. C., Jr., and Hilsinger, R. C.: Importance of the Nose in Filtering and Humidifying Inspired Air. Ohio State Med. J. 61:41-42. 2. Holmes, T.,Goodell H., Wolf, S., and Wolff, H. G.: The Nose. Springfield, Ill. 1950 Charles C. Thomas p. 10 ff. 3. Boies, L. H. R.: Fundamentals of Otolaryngology. Phila. W. B. Saunders Co. 1954 p. 160. 4. Proetz, A. W.: Applied Physiology of the Nose. St. Louis 1941 Zimmerman-Petty Co. p. 6. 5. Spikard, A.: The Common Cold, A Survey. Disease of the Chest 48:545-49. Nov. 1965. 6. Ibid. 7. Bourdial, J.:Role of Allergy in Upper Respiratory Tract Infection. Europa Med. Paris 4:75-80 1965. 8. Holmes, et al. The Nose p. 22. 9. Ibid. p. 320. 10. Proetz, A. W. op. cit. p. 321. 11. Ibid. p. 320. 12. Rees, Linford J.: Physiogenic and Psychogenic Factors in Vasomotor Rhinitis. J. Psychosomatic Research 8:101 Sept. 1964. 13. Horesh, A. J.: Allergy and Infection. An Allergy 23:621-35 Dec. 1965.

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the osmotically induced passage of both water and these electrolytes in response to the presence of an isotonic fluid in the alveoli. Although the plasma data could be explained by dilution or concentration alone, evidence that the passage of ions across the alveolar membrane also contributes to tonicity changes is provided by an increase in sodium and chloride values in the lung aspirate from dogs in the hypotonic series. That both water and electrolyte shifts occur has been well documented in the past by Swann and Spafford.[4]

While the drop in potassium levels during the first sixty seconds of drowning may also be explained on the basis of water moving into or out of the vascular compartment, other factors quickly come into play which cause hyperkalemia regardless of the type of drowning fluid. In the case of fresh water drowning hemolysis might be considered as a source of high potassium levels. Although red cell breakdown is severe, the potassium content of canine erythrocytes [10 mEq/L[15]] is too low to affect plasma levels significantly.

Muscular contraction is known to elevate potassium levels in dogs,[16] but the degree of respiratory effort made by these anesthetized animals did not seem great enough to warrant consideration of this mechanism. The high potassium levels seen in these animals were probably a manifestation of the mixed acidosis produced by each drowning method and by obstructive asphyxia. Supporting this thesis is one study in which anoxia was produced by ventilating the animal with nitrogen. In this instance a respiratory alkalosis produced a rise in pH but potassium remained within normal limits.

These studies reemphasize that as a result of alveolar capillary osmotic gradients, drastic changes in the chemical composition of the circulating blood occur during drowning in fresh water or sea water. These experiments further demonstrate that marked changes in the physical properties of flowing blood also take place. Because the physiologic effects of blood viscosity alterations have yet to be documented *in vivo,* it is not possible to implicate the viscosity changes noted with any specific aspect of death due to drowning, particularly in the presence of such overwhelming factors as anoxia, unphysiologic electrolyte levels, acidosis and ventricular fibrillation. In view of the degree of viscous change as measured at these relatively high shear rates, however, there is good reason to assume that the flow of blood in the microcirculation, especially at the level of the post capillary venules where shear rates are least, is affected to a significant degree.

Summary

A series of experiments was performed to determine the effect of fresh water and sea water drowning on blood viscosity. Evidence was obtained to support the following statements:

1. Fresh water drowning produces marked plasma dilution and a moderate drop in blood viscosity below expected levels.

2. Sea water drowning is associated with severe plasma desiccation and a sharp increase in blood viscosity levels.

3. Drowning with isotonic saline or anoxic asphyxia by itself produces neither osmotic nor viscous changes in the circulating blood.

References

1. Swann, H.G.: Mechanisms of circulatory failure in fresh and sea water drowning. Circulation Research 4:241, 1956.
2. Swann, H.G., and Brucer, M.: The cardiorespiratory and biochemical events during rapid anoxic death. Texas Reports Biology and Medicine 7:604, 1949.
3. Swann, H.G., Brucer, M., Moore, C. and Vezien, B.L.: Fresh water and sea water drowning: A study of the terminal cardiac and biochemical events. Texas Reports Biology and Medicine 5:423, 1947.
4. Swann, H.G. and Spafford, N.R.: Body salt and water changes during fresh and sea water drowning. Texas Reports Biology and Medicine 9:356, 1951.
5. Rand, P.W. and Lacombe, E.: Hemodilution, Tonicity, and Blood Viscosity. Journal of Clinical Investigation. 43:2214, 1964.
6. Rand, P.W. and Lacombe, E.: The effects of angiocardiographic injections on blood viscosity. Radiology 85:1022, 1965.
7. Rand, P.W., Lacombe, E., Hunt, H.E. and Austin, W.H.: Viscosity of normal human blood under normothermic and hypothermic conditions. Journal of Applied Physiol. 19: 117, 1964.
8. Merrill, E.W., Cokelet, G.C., Britten, A., and Wells, R.E. Jr.: Non-Newtonian rheology of human blood — Effect of fibrinogen deduced by "substraction". Circulation Research 13:48, 1963.
9. Schales, O. and Schales, S.S.: Simple and accurate method for determination of chloride in biological fluids. Journal of Biological Chemistry 140:879, 1941.
10. Usami, S., Chien, S., Dellenback, R.S. and Gregersen, M.I.: Species differences of blood viscosity: role of cell size and suspending medium, The Physiologist 8:293, 1965.
11. Thorsen, G. and Hint, H.: Aggregation, sedimentation and intravascular sludging of erythrocytes. Acta chirurgica Scandinavia (Suppl.) 154:3, 1950.
12. Dintenfass, L.: Considerations of the internal viscosity of red cells and its effect on the viscosity of whole blood. Angiology 8:333, 1962.
13. Erslev, A.J., and Atwater, J.: Effect of mean corpuscular hemoglobulin concentration on viscosity. The Journal of Laboratory and Clinical Medicine 62:401, 1963.
14. Wells, R.E., Jr.: The effects of plasma proteins upon the rheology of blood in the microcirculation. Proceedings of the Fourth International Congress on Rheology, Part 4, 431, Interscience Publishers, New York, 1965.
15. Bernstein, R.E.: Potassium and sodium balance in mammalian red cells. Science 120:459, 1954.
16. Rudko, M. and Haddy F.: Venous plasma [K+] during reactive hyperemia in skeletal muscle. The Physiologist 3: 264, 1965.

Editorial

Dogs and the Search For Health*

HOWARD B. BURCHELL, M.D.**

. . . This year the U. S. Congress has had on its docket animal-research legislation concerning which the medical profession, biologists, and indeed scientists in general, as well as leaders in community affairs, must have had interest. Rational information could be obtained from the National Society for Medical Research and in the BULLETIN of that organization. The January-February issue of the latter presented an editorial entitled, "Advancing Laboratory Animal Care Without Sacrificing Human Health and Welfare," and article "Unlock the Doors" (giving an account of the success of an open-door policy to the public in regard to laboratory work on animals), and a reprint of a frank and salty appraisal of the antivivisection movement by the late Dr. A. J. Carlson. The accomplishments of Carlson and those who preceded him – for example, Cannon and Welch – in the maintenance of sound nonrestricted animal research may be all too readily forgotten. Welch, incidentally, as told by Fleming, was against the formal organization of a contra-antivivisection group, believing it would unduly dignify the obstructionist group. He thought that in his time it would be more effective to explain the motivations and rewards of scientific inquiry to persons of influence, in which role Welch apparently performed most ably.

Dr. Maurice B. Visscher, current president of the National Society of Medical Research (NSMR), in a special report printed in MODERN MEDICINE, gave the background for the current proposed legislation and the philosophy of men of reason of the past who worked with animals, and he emphasizes the point that the NSMR acknowledged two types of legislation as consonant with the public interest: (1) that related to the procurement of animals for research and education; and (2) that related to appropriate mechanisms for establishing and enforcing standard for the housing and care of animals. The American Heart Association sent copies of Visscher's communication to members of its councils, with other information which emphasized the dangers of some of the proposed bills and provided a background for specific recommendations to representatives in Congress.

Cardiologists owe a special debt to experimentalists, for traditionally the basis for their claims to understanding the mysteries of the circulation go back to Harvey. There will always be a trend for the practitioner to return to some type of sheer Galenism, an atavistic regression which can be thwarted only by our awareness of our indebtedness to laboratory investigators. We should remember the tribulations of the gentle William Maddock Bayliss, who in the cause of scientific integrity initiated a slander suit against his traducer and won a judgement. The cardiologist may be aware also of the inane charges that Augustus Waller's pet bulldog Jimmie (famous because of the horizontal axis of his heart as compared to Einthoven's "long dogs"), was tortured when his feet were placed in jars of salt water from which wires went to a galvanometer.

The physician should remember his debt to the laboratory investigator, and both should never lose their awareness of the sentiments of the population at large toward animals and toward dogs in particular. No responsible investigator discounts the depth of feeling a person may have for a dog whether pet, guardian, seeing-eye, bench or field champion – nor indeed, in the case of the last, the actual worth of the animal on the open market. Young investigators benefit from reading John Brown's RAB AND HIS FRIENDS, and should remember the number of heads of states who have had a trusted companion in the form of a dog. Claude Bernard has said something like this: the fruits of one's work enjoyed in a beautiful dining room can be obtained only by an approach through a messy kitchen. Nowadays, kitchens are usually something to be proud of, and laboratories should be no less. I believe it was Louis Agassiz who said, "I feel more vexed at impropriety in a laboratory than in a church. The study of nature is intercourse with the highest mind." Certainly the laboratory is no place for one who would espouse the ancient theories of Descartes concerning absence of conscious pain in animals. Even as a master potter had a tidy wheel and a clean floor in the creation of his work so the investigator in the creation of an ever-changing body of knowledge may have a tidy laboratory.

Open criticism of the design of animal experiment including reasons for the choice of dogs if such were used, in a biology meeting should not be constrained, though theoretically it could lead to abuse in the form of sensationalism on the part of lay reporters. Fortunately an increasing number of science reporters are responsible writers, and fewer (I hope) deserve the appellation of a Delilah. The question whether laboratory workers in their zeal for research in the past have shirked responsibility in the nature of animal procurement is a delicate one. If, in the past, occasional professors may have winked figuratively at methods of procurement of animals, the practice is outdated, even as any collusion that may have existed about a century ago between the anatomists in Edinburgh or Philadelphia, and the procurers of corpses for dissection, is now of only historic interest. The American Physiological Society has proclaimed a strong, unequivocal stand on the proper utilization of animals in research, and the guiding principles recommended for the care and use

Continued on Page 33

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**200 1st Street SW, Rochester, Minnesota 55901.

DEAN H. FISHER, M.D.
COMMISSIONER

State Of Maine

Department of Health and Welfare

Maine's Expanded Medical Care Program—Title XIX

To: All Home Health Agencies Certified Under Medicare
From: Dean Fisher, M.D., Commissioner, Maine Department of Health and Welfare
Subject: Provision Under Title 19 of Medicare by Department of Health and Welfare of Home Health Services for its Public Assistance Recipients Over 65 Years of Age (Old Age Assistance) and Under 65 years of Age (Aid to Families with Dependent Children, Aid to the Disabled, and Aid to the Blind.)

Our new Medical Assistance Program for our recipients covered by the law and regulations of Title 19 of Medicare will provide for essentially the same services, with the few exceptions noted below, and the same methods of processing for payment as for all Medicare beneficiaries.

Recipients Over 65 Years of Age (OAA) – The coverage of services, including Home Health Care and the processing for payment, will be similar to those for other beneficiaries over 65 years of age until Title 18. The Department will make through the fiscal intermediary, Associated Hospital Services of Maine, all deductible and co-insurance payments for its recipients, so that no payment by the recipient is required. Our Old Age Assistance recipients should carry a Medicare identification card, as every effort has been made to have all recipients over 65 years enrolled. The Department will notify the Associated Hospital Services of current eligibility of its recipients. It would be helpful if in addition the Home Health Agency would check on the SSA Form 1487, #14, Public Agency – Maine Department of Health and Welfare – in the case of a reported Old Age Assistance recipient.

For this group of recipients over 65 years of age, the Home Health Agency will be dealing with the fiscal intermediary in exactly the same fashion as for all other Medicare beneficiaries over 65 years of age.

Exceptions in Coverage

1. An unlimited number of home health visits per year, unrelated to any prior hospitalization or other institutional care.
2. Hospital care not limited to any specific number of days, subject however to periodic review by the Department, particularly after 90 days.
3. Payment for the first three pints of blood.
4. Payment for general physical examinations and immunizations.

Recipients Under 65 Years of Age (Aid to Families with Dependent Children, Aid to the Disabled, and Aid to the Blind) – For this group of recipients, the Department will administer directly the same services as covered under Title 18 with the following additions, using in so far as possible the same methods of processing for payment. The major difference will be that Home Health Agencies will be dealing directly with the Department rather than through the fiscal intermediary.

Recipients will be identified initially by a letter and later by an identification card which they will carry with them. This identification card cannot, however, be considered a final commitment by the Department because of the unpredictable factors in public assistance such as discontinuance or renewal of grants. We will, however, make every attempt to notify you immediately upon receipt of your report and bill if the individual is not currently covered by our services.

Additions in Coverage for Recipients Under 65 Years

1. An unlimited number of home health visits per year, unrelated to any prior hospitalization or other institutional care.
2. Hospital care not limited to any specific number of days, subject however, to periodic review by the Department particularly after 90 days.
3. Payment for the first three pints of blood.
4. Payment for general physical examinations and immunizations.

Coverage – Home Health Agencies will be reimbursed for home health services' visits to those recipients under 65 years of age under the same conditions as they will be reimbursed for home health visits to those over 65

years of age under Title 18 (Parts A and B) of Medicare.

This means that: 1. the physician must have included home health services in his plan of treatment; 2. there must be an illness or disability for which home health services in the place of residence are required.

Reports and Billings – The Department will use a form essentially the same as that of the SSA with only minor adaptations for the Department's purposes. A small initial supply is enclosed.

Monthly billings to the Department, as indicated on the form, will be appreciated.

The Department will use the same bases for costs and will pay the same cost per visit as that used by Associated Hospital Services, the fiscal intermediary for Home Health Services under Title 18. Such agreed upon rate per visit for each home health agency will approximate current costs as closely as feasible, in order to avoid retroactive adjustments by the Department at the end of the year. This retroactive adjustment will be made between the actual costs applicable to recipients and the amount already paid to the home health agency by the Department which will use the same cost figures as Associated Hospital Services as a basis for retroactive adjustment.

To: Providers of Ambulance Service — September 15, 1966
From: Niles Perkins, M.D., Director, Bureau of Medical Care Programs
Subject: Billing and Payment Procedures

We have been recently notified that you are an approved ambulance service for purposes of reimbursement under Medicare, Title XVIII, Part B.

We have already received bills from some of you and want to process them quickly now for payment. However, we believe that you will want to know the proper billing procedures for present and future billings.

We will honor bills submitted on behalf of ambulance services provided to any recipient of public assistance (Old Age Assistance, Aid to the Disabled, Aid to the Blind, Aid to Families with Dependent Children) in the following instances:

a. Ambulance service was ordered or determined to have been necessary by a physician. In these instances we must have a statement signed by the physician to this effect. The statement should accompany your bill.
b. The patient is transported to the nearest hospital with appropriate facilities or to one in the same locality, from one hospital to another, to the patient's home (or place used as his home), or to an extended care facility, or to a hospital where he had formerly been treated if the hospital is within a reasonable distance, *and*
c. Such transportation is not merely for the convenience of the patient. (Transportation by ambulance to a hospital, extended care facility, or rehabilitation center to obtain home health services not available to the individual in his home is covered only if the conditions in A, B, and C are met.)

Billing Procedures

Public assistance recipients age 65 and over – Bill the fiscal intermediary for Part B (Union Mutual Life Insurance Company) of Title XVIII as you would for any other person age 65 and over, only indicate on the billing form that the person is a public assistance recipient. You should obtain information regarding the receipt of public assistance directly from the patient or his family. Bill on appropriate Social Security form. Union Mutual will reimburse you in our behalf for any portion of the bill chargeable to this Department.

Public assistance recipients under age 65 – Complete one of the enclosed forms (G-49) and forward it for payment to address listed on lower part of form. The physician's statement should accompany this bill as indicated above. These recipients have an Identification Card to indicate their receipt of public assistance. This card cannot be accepted as final commitment by the Department for payment because of changes in case status, but should be accepted for billing purposes. We will notify you very shortly if the person is not currently a public assistance recipient. Reimbursement will be a "reasonable charge" rate as is true of Title XVIII of Medicare, Part B.

In the event that you have further questions you wish answered, you may contact Mr. Robert O. Wyllie at the State House, Augusta 623-4511, Extension 304.

Maine Heart Association Notes
116 State Street, Augusta, Maine

Austin-Flint Murmur Versus the Murmur of Organic Mitral Stenosis

Interpretation of the significance of the apical diastolic rumbling murmur in the presence of aortic insufficiency has continued to plague clinicians since the report by Austin-Flint in 1862. The Austin-Flint murmur is an apical rumbling diastolic murmur that may occur in mid-diastole or presystole, or both, in patients with severe aortic insufficiency. Segal, et al. suggested historical, auscultatory, electrocardiographic and roentgenographic means of differentiation between the Austin-Flint murmur and mitral stenosis. In most cases an accurate diagnosis can be made by means of these clinical criteria, but hemodynamic studies are occasionally necessary for definitive confirmation. It is the purpose of this paper to report a simple . . . bedside technic, . . . which has been found to be an extremely effective means of determining the presence or absence of associated mitral stenosis in patients who have aortic insufficiency and an apical diastolic rumbling murmur.

. . . It has been shown that in patients with organic mitral stenosis, after the inhalation of amyl nitrite, the apical diastolic murmur and pressure in the left strium increase. . . . However, the apical diastolic rumbling murmur diminished in all patients with aortic insufficiency without mitral stenosis. The accuracy of the test depends on the production of tachycardia and a decrease in systemic blood pressure.

The necessity of determining the presence or absence of mitral stenosis in patients who have aortic insufficiency is evident. It is hoped that the amyl nitrite test will be a useful bedside technic for assessing the significance of apical diastolic rumbling murmurs in patients with aortic insufficiency.

Submitted by Jacob B. Dana, M.D., Maine Heart Association
Reference: Nasser, W., et al. New England Journal of Medicine, Vol 275, pages 1007-1009, 1966



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Brunswick, Maine

New Smear Method Used in Detecting Uterine Cancer

A new do-it-yourself smear method of detecting uterine cancer has compared favorably with conventional smear techniques in trials designed by scientists at Marquette University School of Medicine and Milwaukee County General Hospital.

Indigent women, some of them with very little education, made a better score in preparing material for diagnosing their cancers with the new procedure than was accomplished by using regular scrape methods.

The American Cancer Society reported recently that the tests, supported by the Cancer Control program of the United States Public Health Service under the direction of Drs. Richard F. Mattingly, Dermott Curran and Andrew Boyd, indicated that a potent new weapon may have been fashioned against uterine cancer for use by family physicians and county medical societies.

The new technique is called the Irrigation Smear. Developed by Dr. H. J. Davis of Johns Hopkins Medical School Faculty, it entails the use of a small and simple kit with which the woman irrigates her vaginal tract, removes the fluid with a small pipette, and mails the sample with the kit to a laboratory for analysis.

The irrigation results were compared with those achieved by conventional means of obtaining specimens – by a combined smear method of scraping the cervix and by swabbing the upper vagina.

With the irrigation method, every single cancer discovered earlier by physicians using the routine Papanicolaou smear method came to light for a very high detection rate of ten cases per 1,000 asymptomatic women screened. This detection rate is approximately three times the national rate of cervical cancer detection.

Tests were made on women over 21 years old who, as indigents, were treated or examined at Milwaukee County Hospital, the Marquette University Teaching Center. None of the women had cancer symptoms. Nine and three-tenths percent (9.3%) were pregnant, and forty percent (40%) postmenopausal – two conditions which sometimes involve the shedding of abnormal-appearing genital cells. (All patients over 45 were given a vaginal suppository containing estrogen, a female hormone, to improve the shedding of cervical cells.)

A total of 3,225 women were given conventional smear tests by physicians. All these women then were given the irrigation kits; they were not told how to use the kits, but written instructions were enclosed.

The kits included a pipette filled with a 10% alcohol fixative which is used to irrigate the vagina and a stamped and addressed tube in which to mail the kit back to the hospital. The whole kit cost fifty-five cents (55c) to produce, and the average woman could give herself an irrigation smear in about one minute.

Of the 4,424 kits given out, 3,225 were returned. Considering the illiteracy among the women and the many with low intelligence, this seventy percent (70%) return rate was surprisingly high.

The tests were conducted as a blind study – that is, all the smears made by physicians and by the women were coded, and until the codes were broken at the end of each month (so there would be minimal delay in referring cancer patients to treatment), no one knew whether the do-it-yourself smear readings gibed with the earlier findings by the doctors.

The Irrigation Smears were read first by a cell technologist and then reviewed by a cell pathologist.

Of the thirty-two (32) cases of cancer of the uterine cervix detected (along with one cancer of the ovary) by both doctors and do-it-yourself smears, all were extremely early and readily curable. The total of one hundred eight (108) positive or suspicious smears shown by irrigation is high – 3.3% of all women examined. Numerous studies, however, have shown that patients with large families and from a low socio-economic background are most susceptible to cancer of the uterine cervix.

A current unsatisfactory rate of 5% for the Do-It-Yourself Kit is compared with 1.4% of the smears taken by doctors. Broken pipettes and delay in mailing specimens accounted for most unsatisfactory Irrigation Smears.

American Cancer Society News Service Release

County Society Notes

ANDROSCOGGIN

A meeting of the Androscoggin County Medical Association was held at the Central Maine General Hospital in Lewiston, Maine on October 20, 1966 with twenty-one members present. The meeting was called to order by the President, Harvey J. Proulx, M.D.

George B. O'Connell, M.D. introduced the subject of increasing the basic room rate coverage on the Blue Cross contract. It was moved and voted to discuss this possibility with Dr. Hanley.

Dr. Shields reviewed the difference between Utilization and Audit Committees. Prior to Medicare, the audit was retroactive in type. He outlined the duties of the Utilization Committee as required by law plus an added factor by the Joint Commission on Accreditation. Long-term stay was defined with examples given.

Wilfrid A. Cloutier, M.D. outlined the Committee functions and working at St. Mary's General Hospital – short stay, i.e., one or two days should be checked, as many could be worked up as outpatients. A red flag on the chart holder at St. Mary's means the patient has to be re-certified. A question and answer period followed.

DONALD L. ANDERSON, M.D., *Secretary*

HANCOCK

A meeting of the Hancock County Medical Society was held at the Hancock House in Ellsworth, Maine on November 9, 1966.

Enid L. Melville, M.D. of Machias, Maine spoke on the Recognition and Management of the Suicidal Patient. Virgil G. Wright, M.D. of Machias, Maine was a guest at the meeting.

RUSSELL G. WILLIAMSON, M.D., *Secretary*

LINCOLN-SAGADAHOC

A meeting of the Lincoln-Sagadahoc County Medical Society was held at The Ledges in Wiscasset, Maine on November 15, 1966. The meeting was called to order by the President, Alan W. Zeller, M.D.

Frederick B. Lidstone, M.D. of Auburn, Maine was the guest speaker. He discussed the Committee on Maternal Mortality of the Maine Medical Association and asked for the support of the members of this Society.

GEORGE W. BOSTWICK, M.D., *Secretary*

CUMBERLAND

Eighty-three members and guests attended the meeting of the Cumberland County Medical Society which was held at the Sheraton-Eastland Motor Hotel in Portland, Maine on November 17, 1966.

Edward G. Asherman, M.D., Chairman of the physician-members of the Joint Medical-Legal Liaison Committee, discussed the proposed Interprofessional Code and answered questions assisted by Drs. Robinson L. Bidwell and George F. Sager and by Messrs. John Mitchell, Herbert Sawyer, John Flaherty and Herbert Bennett. The membership of the Society unanimously voted approval of the Code, with thanks to the Committee which worked so hard to prepare the document.

A discussion then followed of a cooperative venture to avoid baseless suits against physicians and to assist the legal profession in obtaining medical testimony in valid cases of malpractice. Mr. Bennett told of medical review panels in other areas, Mr. Sawyer described the attorney-physician screening panel as used in Arizona, and Mr. Flaherty reported on the panel of medical specialists as used in California. Mr. Mitchell emphasized that these various concepts were brought forth only for informational purposes and that it would probably be a year before the joint committee would have carried out a sufficiently detailed investigation of the various alternatives to be in a position to make a definite recommendation to the local legal and medical professions.

The President, Alvin A. Morrison, M.D. announced that updating of the bylaws of the Society was being undertaken. Dr. Morrison stated that he had appointed Drs. Sumner E. Moulton and Thomas F. Conneen to the Utilization Committee for Extended Care Facilities and that he personally was serving on a liaison committee for arranging contracts between the hospitals and the Extended Care Facilities.

A nominating committee consisting of Drs. Albert Aranson, Chairman, Lloyd G. Davies, William J. Tetreau, Thomas A. Martin and Philip P. Thompson, Jr. was appointed by the President. Dr. Morrison asked for a report from the Chairman of the Public Relations Committee at the next meeting. Charles R. Glassmire, M.D. expressed concern about non-medical persons being able to administer the home health care program.

STANLEY B. SYLVESTER, M.D., *Secretary*

KENNEBEC

The Kennebec County Medical Association met at the Veterans Administration Hospital in Togus, Maine on November 17, 1966. The meeting was opened by the President, Allan J. Stinchfield, M.D.

A resolution was read on the death of Adolphe J. Gingras, M.D. and it was voted that the resolution be included in the minutes of this meeting.

The nominating committee read a tentative slate of officers for the coming year to be voted on at the December meeting.

Captain James A. McLaughlin, MC, USN, Assistant District Medical Officer, First Naval District, Boston and Chairman, Physical Evaluation Board, Naval Hospital, Chelsea, was the guest speaker. He gave a very straightforward, practical discussion of the many problems involved in rehabilitation.

LUCIEN F. VEILLEUX, M.D., *Secretary*

PISCATAQUIS

The Piscataquis County Medical Society met on December 1, 1966 at the Greenville Inn in Greenville, Maine. The meeting was attended by thirty-one physicians, wives and six nurses of the Charles Dean Memorial Hospital, Greenville Jct., Maine.

The program for this meeting was arranged by the Maine Thoracic Society. Warren G. Strout, M.D. of the Eastern Maine General Hospital in Bangor gave a very enlightening talk on the use of various respirators and fog-mist in the treatment of chronic respiratory diseases.

The following officers were elected for 1966-1967:

President, Felix M. Garcia-Rey, M.D., Milo
Vice President, Charles H. Lightbody, M.D., Guilford
Secretary-Treasurer, Isaac Nelson, M.D., Greenville
Delegate to the Maine Medical Association House of Delegates: Linus J. Stitham, M.D., Dover-Foxcroft. Alternate: Charles H. Lightbody, M.D.
Board of Censors, Drs. George C. Howard, Guilford, Harvey C. Bundy and Albert M. Carde, both of Milo

ISAAC NELSON, M.D., *Secretary*

FRANKLIN

The following members of the Franklin County Medical Society have been elected to serve as Delegate and Alternate to the 1967 Maine Medical Association House of Delegates: Delegate, Paul A. Brinkman, M.D., Farmington and Alternate, Wallace H. Duffy, M.D., Farmington.

MAYNARD B. COLLEY, M.D., *Secretary*

KNOX

A meeting of the Knox County Medical Society was held on December 6, 1966 at the House of 1800 in Glen Cove, Maine.

It was voted that the Society dues be increased to $10.00 a member for the year 1967.

The following slate of officers was elected for 1966-1967:

President, Merrill J. King, Jr., M.D., Rockland
Vice President, Paul A. Millington, M.D., Camden
Secretary, William W. Ward, M.D., Rockland
Delegates to the Maine Medical Association House of Delegates: Drs. Onni C. Kangas and Thomas W. Williams, both of Rockland. Alternate: Mustafa V. Onat, M.D., St. George

WILLIAM W. WARD, M.D., *Secretary*

New Members

FRANKLIN

Tomas Duran, M.D., Livermore Falls 04254
Abdollah S. Gashgai, M.D., Livermore Falls 04254

KENNEBEC

Cesar M. Caoili, M.D., Augusta State Hosp., Augusta 04330

PENOBSCOT

Jose V. Amorin, Jr., M.D., 297 Center St., Bangor 04401
John Madaras, M.D., Bangor State Hosp., Bangor 04401
Thomas W. Samuelsen, M.D., 194 Main St., Lincoln 04457
David M. Sensenig, M.D., 431 State St., Bangor 04401
Dudley B. Tyson, M.D., St. Joseph Hosp., Bangor 04401
Joseph Vydas, M.D., Bangor State Hosp., Bangor 04401

PISCATAQUIS

Dale C. Bouton, M.D., Dexter 04930

Announcement

Department of Health and Welfare Division of Maternal and Child Health Including Services for Crippled Children

(By Appointment Only)

Orthopedic Clinics

Bangor — St. Joseph Hospital
9:00 a.m. and 1:00 p.m.: Jan. 26, Mar. 23
Half-day sessions: 1:00 p.m.: Feb. 23
Fort Fairfield — Community General Hospital
9:00 a.m. and 12:30 p.m.: Mar. 13
Houlton — Aroostook General Hospital
9:00 a.m.: Mar. 15
Lewiston — Central Maine General Hospital
9:00 a.m.: Jan. 20, Feb. 17, Mar. 17
Machias — Down East Community Hospital
9:00 a.m.: Jan. 27
Portland — Maine Medical Center
9:00 a.m.: Feb. 13, Mar. 13
Presque Isle — Arthur R. Gould Memorial Hospital
9:00 a.m. and 12:30 p.m.: Mar. 14
Rockland — Knox County Hospital
1:30 p.m.: Feb. 16
Rumford — Community Hospital
1:30 p.m.: Mar. 15
Waterville — Thayer Hospital
1:30 p.m.: Feb. 23

Cardiac Clinics

Bangor — Eastern Maine General Hospital
9:00 a.m.: Jan. 27, Feb. 10, 24, Mar. 10, 24
Portland — Maine Medical Center
9:00 a.m.: Every Friday (holidays excepted)

Convulsive Clinic

Fort Fairfield — Community General Hospital
1:30 p.m.: Feb. 1

Cleft Palate Evaluation Clinic

Portland — Maine Medical Center
10:00 a.m.: Feb. 14

Pediatric Clinics

Bangor — Eastern Maine General Hospital
1:30 p.m.: Jan. 27, Feb. 24, Mar. 24
Fort Kent — Peoples Benevolent Hospital
10:00 a.m.: Mar. 29
Presque Isle — Arthur R. Gould Memorial Hospital
1:30 p.m.: Jan. 25, Feb. 15

Clinics for Mentally Retarded Preschool Children

Waterville — Thayer Hospital
9:00 a.m.: Jan. 18, Feb. 1, 15, Mar. 1, 15, 29
Lewiston — Central Maine General Hospital
9:00 a.m.: Feb. 13, Mar. 13
Lewiston — St. Mary's General Hospital
9:00 a.m.: Jan. 23, Feb. 27, Mar. 27

Cystic Fibrosis Clinics

Lewiston — Central Maine General Hospital
9:00 a.m.: Feb. 3, Mar. 3
Fortland — Maine Medical Center
9:00 a.m.: Jan. 17, Feb. 21, Mar. 21

Hemophilia Clinic

Portland — Maine Medical Center
Appointments made through this office on an individual basis
Out-patient service at the Maine Coast Memorial Hospital, Ellsworth, for pediatric, epilepsy and orthopedic services will be arranged by appointment only

Family Planning Clinics

Portland — Maine Medical Center
First and third Thursday, every month. Morning clinic
Bangor — Eastern Maine General Hospital
First Friday, every month. Morning clinic

DOGS AND THE SEARCH FOR HEALTH

Continued from Page 28

of animals are boldly outlined in a full page in issues of the Society's journal.

The attention of the anti-experimentalist group has almost invariably focused on dogs, and usually has espoused legislation which would engender more obstruction to chronic or long-term experiments than to acute ones. Both types of research are important in the assessment of the need of experiments on primates including man and the furthering of the understanding of cardiovascular disease and the eventual reduction of the grim toll of ill health and premature death from it.

August 16 is the feast day of Saint Roch, the French Franciscan whose life is shrouded in legend, but who apparently, after helping victims of plague in a village he entered on his pilgrimage, took ill himself, lay exhausted alone and was about to die. However, recovery took place after a small dog brought him bread. Munthe has this same small saint, the patron saint of dogs, plead for his soul as he gives his vision of his inquisition. More than six centuries after the death of Saint Roch we also do honor to those heroes in the canine world in a different way, which through the discipline of medical research have been responsible for the return of health to many persons.

It is to be hoped that the August assembly of legislators in Washington will have listened patiently and inquiringly to the opinions of the NSMR as those opinions relate to animal-research legislation, and that the seeming rashness if not indeed the touch of madness, present in some of the proposed legislation, will have been exorcised before these canicular days have started. The humane scientific viewpoint has been articulately expressed by the Committee on Public Health of the New York Academy of Medicine, and it is hoped that their report was widely distributed to legislators. The cooperative attitude of scientists expressed through the NSMR is set forth thus: "The scientific community in the United States invites the members of Congress to learn at first hand by visits to laboratories what actually goes on, and why." Possibly also cardiologists, remembering their debts to the animal laboratory, will wish to know more of the work of the National Society for Medical Research and support its objectives.

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CANCER IN CHILDREN, DIAGNOSIS AND MANAGEMENT OF CANCER OF THE COLON AND RECTUM, ORAL CANCER, NURSING MANAGEMENT OF THE PATIENT WITH CANCER, and THE DENTIST AND CANCER. The balance will be released in 1967-1968.

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AMERICAN CANCER SOCIETY®

Maine Division, Inc.

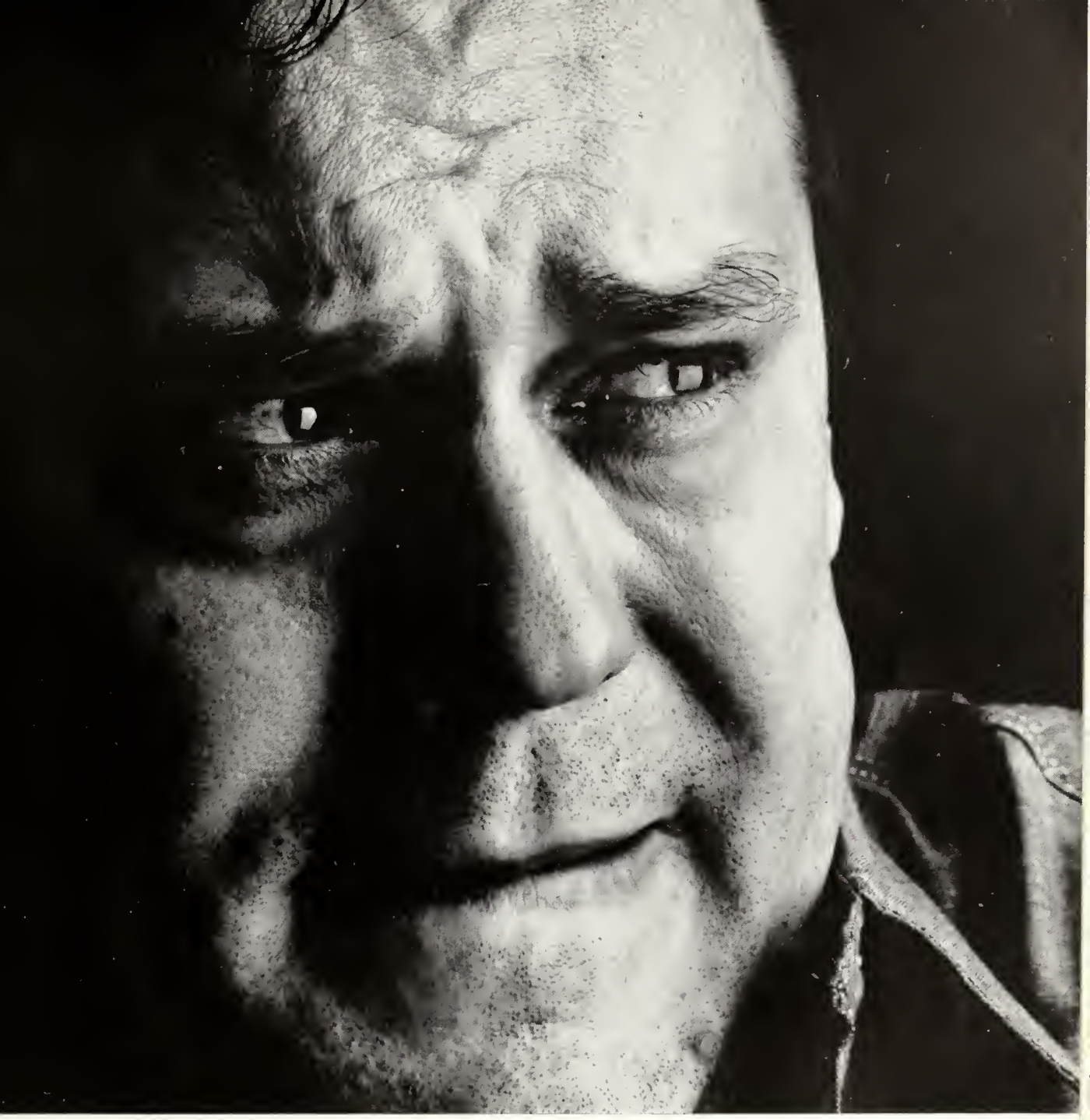


Photo professionally posed

Mike expects a penicillin injection. He's about to be pleasantly surprised.

His physician is going to prescribe an oral penicillin —PEN•VEE® K (potassium phenoxymethyl penicillin). It's usually so rapidly and completely absorbed that therapeutic serum levels are produced in 15 to 30 minutes. Higher serum levels generally last longer than with oral penicillin G.

Indications: Infections due to pathogens susceptible to oral penicillin G. Prophylaxis of rheumatic fever in patients with previous history of the disease.

Precautions: Skin rash, symptoms resembling those of serum sickness, or other manifestations of penicillin-allergy may occur. Measures for treating anaphylaxis should be readily available: epinephrine, oxygen and pressor drugs for relief of immediate allergic reactions; antihistamines and corticosteroids for delayed effects. Penicillin may delay or prevent the appearance of primary syphilitic lesions. Patients with gonorrhea who are suspected of concurrent syphilitic infections should be tested serologically for at least 3 months. Where lesions of primary syphilis are suspected, dark-field examination should precede use of penicillin. As with other antibiotics overgrowth of nonsusceptible organisms may occur; if so, discontinue and take appropriate measures. Treat β-hemolytic streptococcal infections with full therapeutic dosage for at least 10 days to prevent development of rheumatic fever or glomerulonephritis.

Contraindications: Infections caused by nonsusceptible organisms; history of penicillin sensitivity

Composition: Tablets—125 mg. (200,000 units) and 250 mg., (400,000 units); Liquid—125 mg. (200,000 units) and 250 mg. (400,000 units) per 5 cc.

Wyeth Laboratories Philadelphia, Pa.

ORAL **PEN·VEE® K**
(potassium phenoxymethyl penicillin) Wyeth



fluocinolone acetonide — an original steroid from

SYNTEX

LABORATORIES INC., PALO ALTO, CALIF.

controls infected inflammatory dermatoses that start from scratch



Neo-Synalar®

(fluocinolone acetonide-neomycin sulfate cream)

Cream

The "itch-scratch" cycle usually associated with inflammation often results in infected dermatoses because broken skin surfaces are particularly vulnerable to pathogenic bacteria.[1] To treat infected inflammatory dermatoses, Neo-Synalar Cream combines the most active topical corticosteroid with a highly reliable antibiotic generally reserved for topical application.

In Neo-Synalar, fluocinoline acetonide controls the inflammation and provides rapid relief from associated pruritus. At the same time, its antibacterial component—neomycin—combats superficial infection caused by many gram-positive and gram-negative bacilli[2] that often colonize and thrive on abraded skin.[1]

A specially formulated vanishing cream base that is greaseless and odor free makes Neo-Synalar cosmetically appealing, and encourages greater patient cooperation.

controls the infection

stops the scratch

Contraindications: Tuberculous, fungal, and most viral lesions of the skin (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of its components. **Precautions:** Neomycin rarely produces allergic reactions. Prolonged use of any antibiotic may result in overgrowth of nonsusceptible organisms; if this occurs, appropriate therapy should be instituted. Where severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. **Side Effects:** Side effects are not ordinarily encountered with topical corticosteroids. As with all drugs, however, a few patients may react unfavorably to Neo-Synalar under certain conditions. **Availability:** Neo-Synalar Cream (0.025% fluocinolone acetonide, neomycin sulfate, equivalent to 0.35% neomycin base), 5 and 15 Gm. tubes.

References: 1. Pillsbury, D. M., Shelley, W. B., and Kligman, A. M.: A manual of cutaneous medicine, Philadelphia, Saunders, 1961, p. 79. **2.** Barber, M., and Garrod, L. P.: Antibiotic and chemotherapy, Baltimore, Williams and Wilkins, 1963, p. 111.



Now, now, Mrs. Forsythe, we've never lost a cold patient yet.

When she's experiencing acute discomfort from cold symptoms, it's small wonder the patient becomes distressed about her condition.

She will breathe easier when you prescribe Novahistine LP.

Novahistine LP is a long-acting decongestant that helps restore normal mucus secretion and ciliary activity—physiologic mechanisms which prevent infection of the respiratory tract. A dose of two tablets taken in the morning and repeated in the evening will usually keep air passages clear for 24 hours.

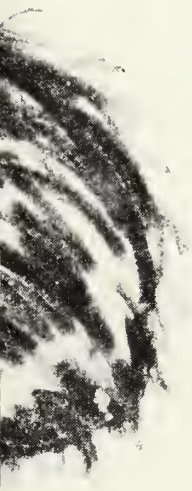
Use cautiously in individuals with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution patients who operate machinery or motor vehicles that drowsiness may result.

Each Novahistine LP tablet contains: phenylephrine hydrochloride, 25 mg., and chlorpheniramine maleate, 4 mg.

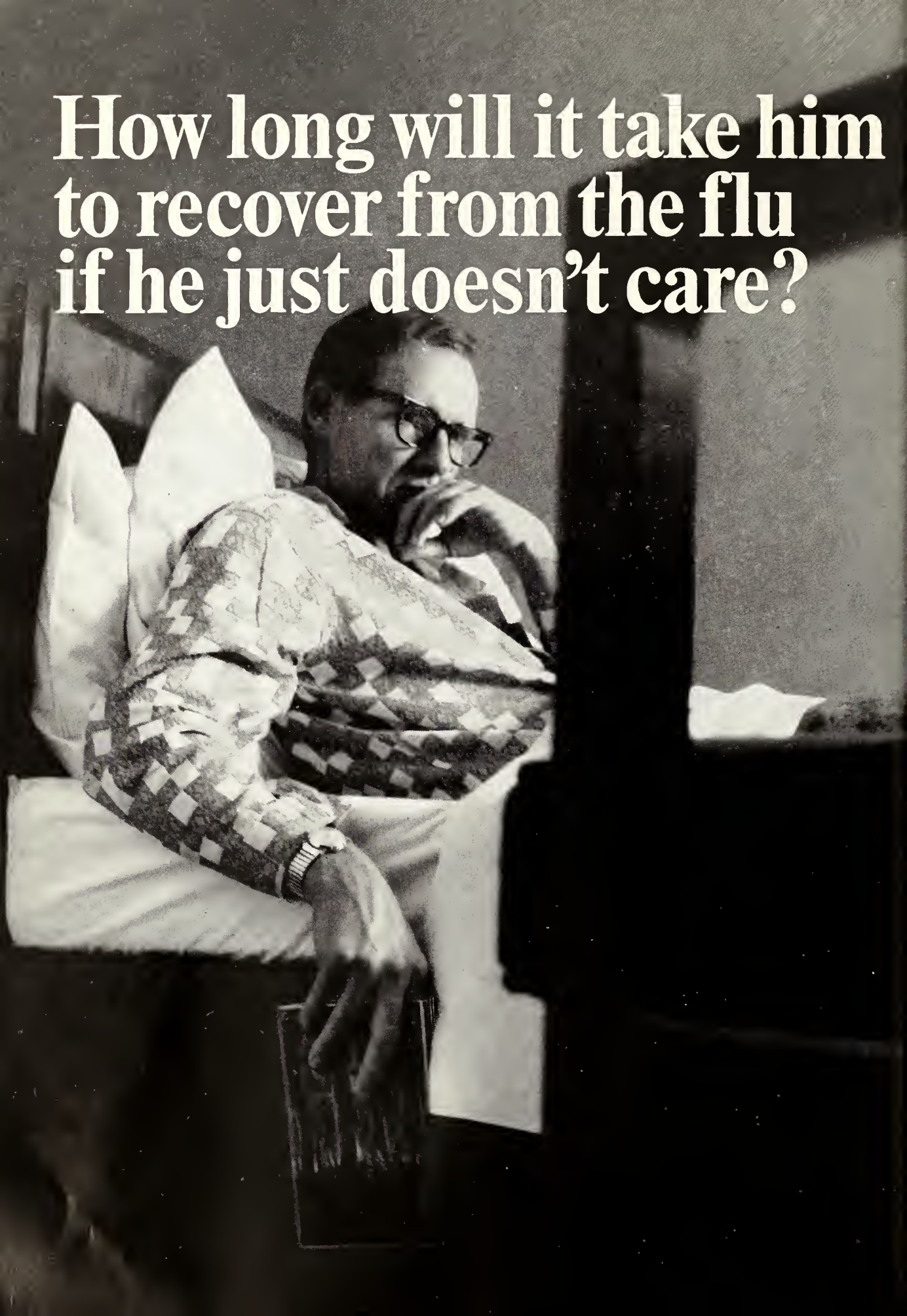
DOW **PITMAN-MOORE** Division of The Dow Chemical Company, Indianapolis

NOVAHISTINE® LP

For relief of nasal congestion.



Saxon


How long will it take him
to recover from the flu
if he just doesn't care?

Does he really care? Is he alert, encouraged, positive and optimistic about getting out of bed and back to work soon?

Or is he giving in to the depressing impact of confinement?

When functional fatigue complicates convalescence, Alertonic can help...

Pleasant-tasting Alertonic is pipradrol hydrochloride—an effective cerebral stimulant whose gentle analeptic action helps counteract the apathy and inertia that so often delay convalescence—together with an excellent vitamin and mineral formula, in a satisfying 15% alcohol vehicle.

Nothing fosters confidence and a sense of well-being better than your own personal warmth, understanding and encouragement together with Alertonic to help insure prompt response.

Adequate dosage is important: Prescribe Alertonic—one tablespoonful t.i.d., 30 minutes before meals...tastes best chilled.

And for your patient's sake, prescribe Alertonic in the convenient, economical one-pint bottle.

Alertonic®

Available Only On Prescription

Each 45 cc. (3 tablespoonfuls) contains: alcohol, 15%; pipradrol hydrochloride, 2 mg.; thiamine hydrochloride (vitamin B_1) (10 MDR*), 10 mg.; riboflavin (vitamin B_2) (4 MDR), 5 mg.; pyridoxine hydrochloride (vitamin B_6), 1 mg.; niacinamide (5 MDR), 50 mg.; choline,† 100 mg.; inositol,† 100 mg.; calcium glycerophosphate, 100 mg. (supplies 2% MDR for calcium and for phosphorus) and 1 mg. each of the following: cobalt (as chloride), manganese (as sulfate), magnesium (as acetate), zinc (as acetate), and molybdenum (as ammonium molybdate).

*Multiple of adult Minimum Daily Requirement supplied.
†The need for these substances in human nutrition has not been established.

Indications: 1. Functional fatigue such as that often associated with: a depressing life experience or stressful time of life; advancing years; convalescence; limited activity or confinement. 2. Poor appetite and vitamin-mineral deficiency as they occur in: patients having faulty eating habits; geriatric patients who are losing interest in food; patients convalescing from debilitating illness or surgery.

Contraindications: As with other drugs with CNS stimulating action, Alertonic is contraindicated in hyperactive, agitated or severely anxious patients and in chorea or obsessive compulsive states.

Side effects: Reports of overstimulation have been rare. Patients who are known to be unduly sensitive to the effects of stimulant drugs should be observed carefully in the initial stages of treatment.

Dosage: Adults, 1 tablespoonful; children (over 15 years old), 1 to 2 teaspoonfuls; children (4 to 15 years old), 1 teaspoonful. To be taken three times daily 30 minutes before meals.

Merrell

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new from Ames
5 basic uro-analytical facts in 30 seconds



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BRAND REAGENT STRIPS

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Urine test results with LABSTIX Reagent Strips can represent significant guides to differential diagnosis or therapy in many conditions. An unexpected "positive" may enable you to detect hidden pathology—long before more recognizable symptoms become evident. Negative results, which permit you to rule out abnormalities in a broad clinical range, can serve as baseline values for reference in future examinations. The 5 colorimetric test areas encompassed on LABSTIX Reagent Strips are:

pH—values are read numerically in the essential range of pH 5 to pH 9.

Protein—results are read either in the "plus" system or in mg. % in amounts approximating "trace," 30, 100, 300, and over 1000 mg. %.

Glucose—provides a "Yes-or-No" answer for urine "sugar spill."

Ketones—detects ketone bodies in urine—**both** acetoacetic acid and acetone. Reacts with as little as 5 to 10 mg. % of acetoacetic acid.

Occult Blood—specific test for intact red cells, hemoglobin or myoglobin. Results are read as negative, small, moderate or large amounts.

Now a Clear Reagent Strip of Firm Construction

...facilitates handling during testing procedure. Excellent color contrast made possible by the clear plastic strip, together with the clearly defined color charts provided, permits precise, reproducible colorimetric readings in all 5 test areas. A more definitive interpretation of uro-analytical facts is made possible.

Available: LABSTIX Reagent Strips, bottles of 100 (color charts are supplied with each bottle).

Ames Company, Inc., Elkhart, Indiana

AMES

08165

"Take a laxative" is a harsh sentence

Although there are more than 60 ethical laxatives available for the constipated patient today, unfortunately, not one really produces an effect much like a normal bowel movement. Instead they whip the bowel, torment it and leave it irritated, inflamed and exhausted.

On the other hand, Dulcolax provides a really normal movement. Through its unique contact action it induces the kind of natural contraction waves of the colon necessary for gentle, complete, comfortable bowel movements.

For your next constipated patient, try Dulcolax, the laxative with the gentle touch.

Dulcolax, brand of bisacodyl tablets (5 mg.)

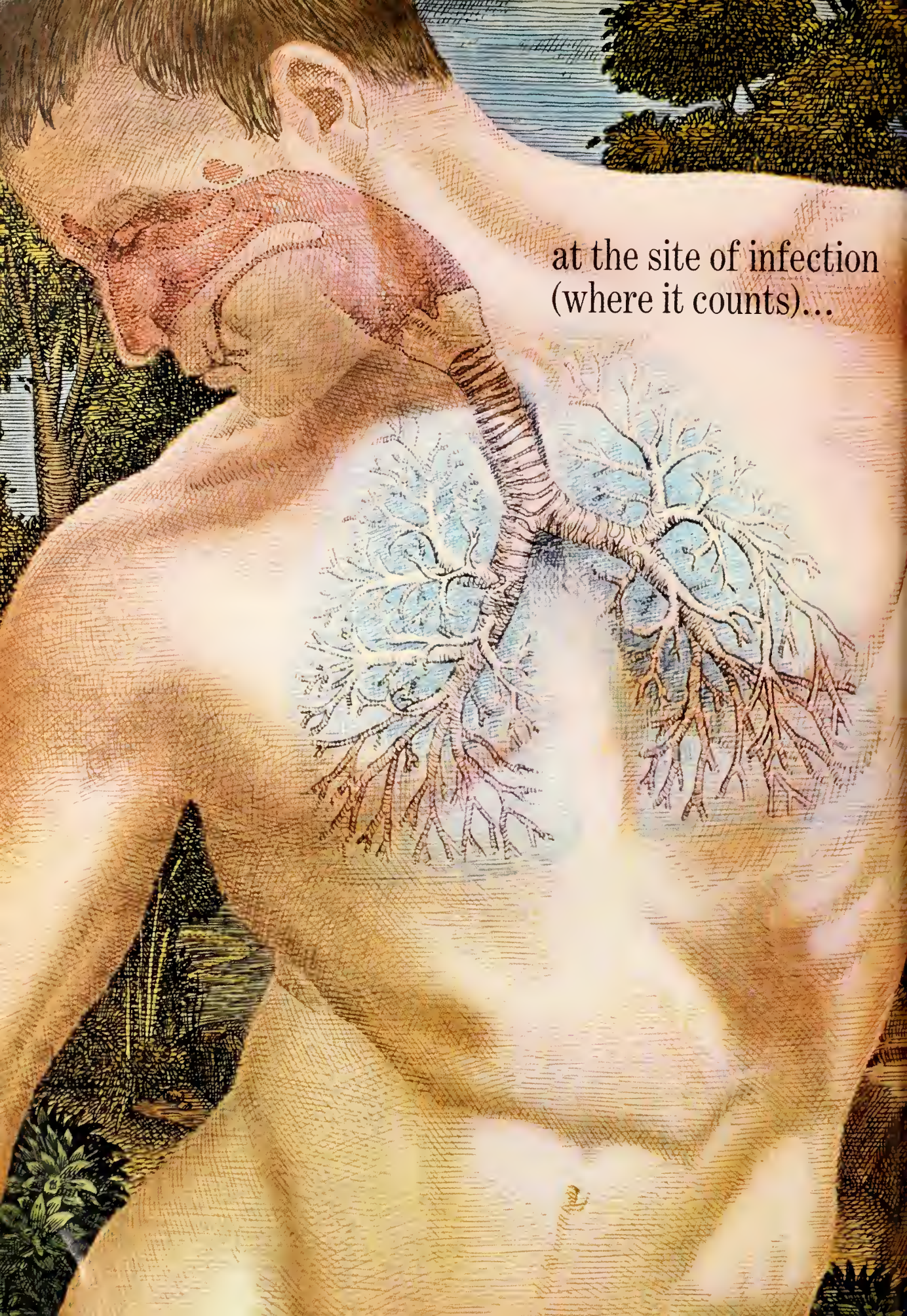
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Geigy Pharmaceuticals Division of Geigy Chemical Corporation Ardsley, New York

Dulcolax®

a gentle persuasion

Geigy


at the site of infection
(where it counts)...

Ilosone® provides more antibacterial activity than any other oral erythromycin

Acid stable, better absorbed ... Ilosone produces faster, higher, more prolonged blood levels, even in the presence of food[1-3]

Because it is the most active form of oral erythromycin, Ilosone can help assure consistently greater antibacterial activity at the site of infection. Ilosone produces peak antibacterial blood levels two to four times those of other erythromycin preparations.[1,2] Not only are these levels attained earlier, but they are maintained for much longer periods. Even the presence of food does not seem to affect the activity of Ilosone.[1,3]

In the treatment of patients with bacterial infections susceptible to erythromycin, Ilosone has compiled an excellent therapeutic record. Since it exerts its greatest activity against gram-positive organisms, it is particularly useful in common respiratory and soft-tissue bacterial infections. Ilosone kills—not merely inhibits—streptococci, pneumococci, and more strains of staphylococci than any other macrolide antibiotic. This bactericidal action, coupled with the high antibacterial levels attained, makes Ilosone especially valuable in patients with low host resistance, such as infants, debilitated individuals, and diabetics.

Ilosone has shown no cross-resistance with penicillin and may be effective against organisms that have become resistant to that agent. Despite its high antibacterial activity, Ilosone has demonstrated a low incidence of side reactions. Blood dyscrasias, ototoxicity, and tooth staining have not been observed. Infrequent cases of drug idiosyncrasy, manifested by a cholestatic jaundice, have occurred, but there have been no known definite residual effects.

700121

Ilosone®
Erythromycin Estolate

Lilly

(See next page for prescribing information.)

Ilosone®/ the most active oral form of erythromycin

Description: Ilosone is the most active form of oral erythromycin that has been developed. Because it is stable in acid, well absorbed, and excreted in lesser amounts in the bile, it provides faster, higher, and longer-lasting levels of antibacterial activity (ABA) in the serum, even when taken with food, than do comparable doses of erythromycin.

Indications: Ilosone is indicated in infections caused by microorganisms sensitive to its action (especially staphylococci, hemolytic streptococci, and pneumococci). The drug is therefore useful in a high proportion of bacterial diseases encountered in clinical practice and particularly in the treatment of bacterial infections of the upper and lower respiratory tract and soft tissues.

In the treatment of acute bacterial pharyngitis and tonsillitis, this antibiotic has promptly eradicated the bacteria (streptococci) and has produced a parallel prompt clinical improvement. There have been no group A beta-hemolytic streptococci resistant to this preparation. In beta-hemolytic streptococcus infections, treatment should be maintained for ten days to prevent the development of rheumatic fever or glomerulonephritis.

Erythromycin estolate has proved to be very effective in pneumococcus pneumonia and in acute bronchitis with pneumococci on culture. Bronchopneumonia and otitis media in children have responded well to its use.

The antibiotic has been used very successfully in staphylococcus infections. Good therapeutic results have been obtained in soft-tissue infections, abscesses, cellulitis, carbuncles, wound infections, and furunculosis.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents. As is the case with any treatment regimen used in these severe conditions, surgical procedures should be performed when indicated, and large dosages of the antimicrobial agents should be employed. In this fashion, Ilosone has been effective in staphylococcus pneumonia, osteomyelitis, septicemia, empyema, and meningitis.

Multiple 500-mg. doses of the drug have been useful in gonorrhea and syphilis. Since penicillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with pre-existing liver disease or dysfunction.

Side-Effects: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have appeared in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly if the drug is readministered to sensitive patients, usually within forty-eight hours. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a second time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small compared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extrahepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeared to be definitely related to use of the drug, laboratory findings wer characterized by increased direct-reacting bilirubin, elevat alkaline phosphatase levels, negative or weakly positive cephali flocculation and thymol turbidity tests, elevated serum glutam oxalacetic transaminase levels, peripheral eosinophilia, and no mal cholecystograms.

Individual idiosyncrasy seems evident since jaundice has n been reported in other patients taking prolonged courses of th medication. Patients with chronic infection have been given 1 to 2 Gm. of the drug daily for periods of two to six months, an patients with rheumatic fever have taken prophylactic doses 0.5 Gm. daily for two years without difficulty. In one group 144 patients who received the drug daily for two years, no jaun dice was noted. It was of interest that members of six of the patients' families, who were not taking the drug, had episod of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels wer determined in a group of fifty-four adults and children who too 250 mg. of Ilosone daily for an average of sixteen months a rheumatic fever prophylaxis. The results were compared wit those of a similar group of forty-four patients who received pe icillin. There were no cases of jaundice in either group. Elevatio of SGPT and serum alkaline phosphatase levels during the cours of treatment was observed in one patient treated with Ilosor and in two patients treated with penicillin. Seven other patient in the group receiving Ilosone and four others in the penicilli group showed elevations in one of the tests at some time durin administration of the drugs.

Very satisfactory therapeutic results, without toxicity, wer reported in 102 pediatric patients who received short-term (ten day) courses of Ilosone in the treatment of streptococcus infe tions. Results of liver function tests in these patients were com parable to those in a similar control group who had receive penicillin.

Gastro-intestinal disturbances not associated with hepatic ef fects are observed in a small proportion of individuals as a resul of a local stimulating effect of the medication on the alimentar tract; however, the normal intestinal gram-negative bacteria flora is not appreciably altered by erythromycin drugs.

Although allergic manifestations are uncommon with the us of erythromycin, there have been occasional reports of urticaria skin eruptions, and, on rare occasions, anaphylaxis.

Administration and Dosage: Ilosone is administered orally.

Ilosone Pulvules®
Ilosone Chewable Tablets
Ilosone Drops
Ilosone, 125, for Oral Suspension

For infants and for children under twenty-five pounds of bod weight, the usual dosage is 5 mg. per pound every six hours; fo children twenty-five to fifty pounds, 125 mg. every six hours (Tablets Ilosone Chewable should be chewed or crushed an swallowed with water.)

For adults and for children over fifty pounds, the usual dosag of Ilosone is 250 mg. every six hours.

For severe infections, these dosages may be doubled.

When larger doses are indicated, parenteral erythromyci therapy should be considered.

In the treatment of syphilis, the recommended total dosage 20 to 30 Gm. given in divided doses for a period of ten to fifte days. Close follow-up of the patient is necessary since erythro mycin drugs have not had adequate evaluation in all stages o syphilis. Examinations of spinal fluid are recommended as par of the follow-up therapy.

For gonorrhea, 500 mg. four times a day for four days ar recommended. In the treatment of gonorrhea, patients with suspected lesion of syphilis should have a dark-field examinatio before receiving antibiotics, and monthly serologic tests shoul be made for a period of three months.

How Supplied: Pulvules Ilosone, Capsules, N.F., 125 and 250 mg (equivalent to base), in bottles of 24 and 100.

Tablets Ilosone Chewable, N.F., 125 mg. (equivalent to base) in bottles of 50.

Ilosone Drops, 5 mg. (equivalent to base) per drop, in 10-cc. size packages, with dropper calibrated at 25 and 50 mg.

Ilosone, 125, for Oral Suspension, N.F., 125 mg. (equivalent to base) per 5-cc. teaspoonful, in 60 and 150-cc.-size packages

References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:69, 1964.
2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:398, 1962.
3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198, 1960.

Additional information available to physicians upon request.
Eli Lilly and Company, Indianapolis, Indiana 46206.

Lilly



after surgery

B and C vitamins are therapy: Therapeutic amounts of B and C in stress formula vitamins often are vital during periods of physiologic stress. STRESSCAPS capsules, designed to meet increased metabolic demands, aid in achieving a more comfortable convalescence, a more rapid recovery. After surgery, as in many stress conditions, STRESSCAPS vitamins are therapy.



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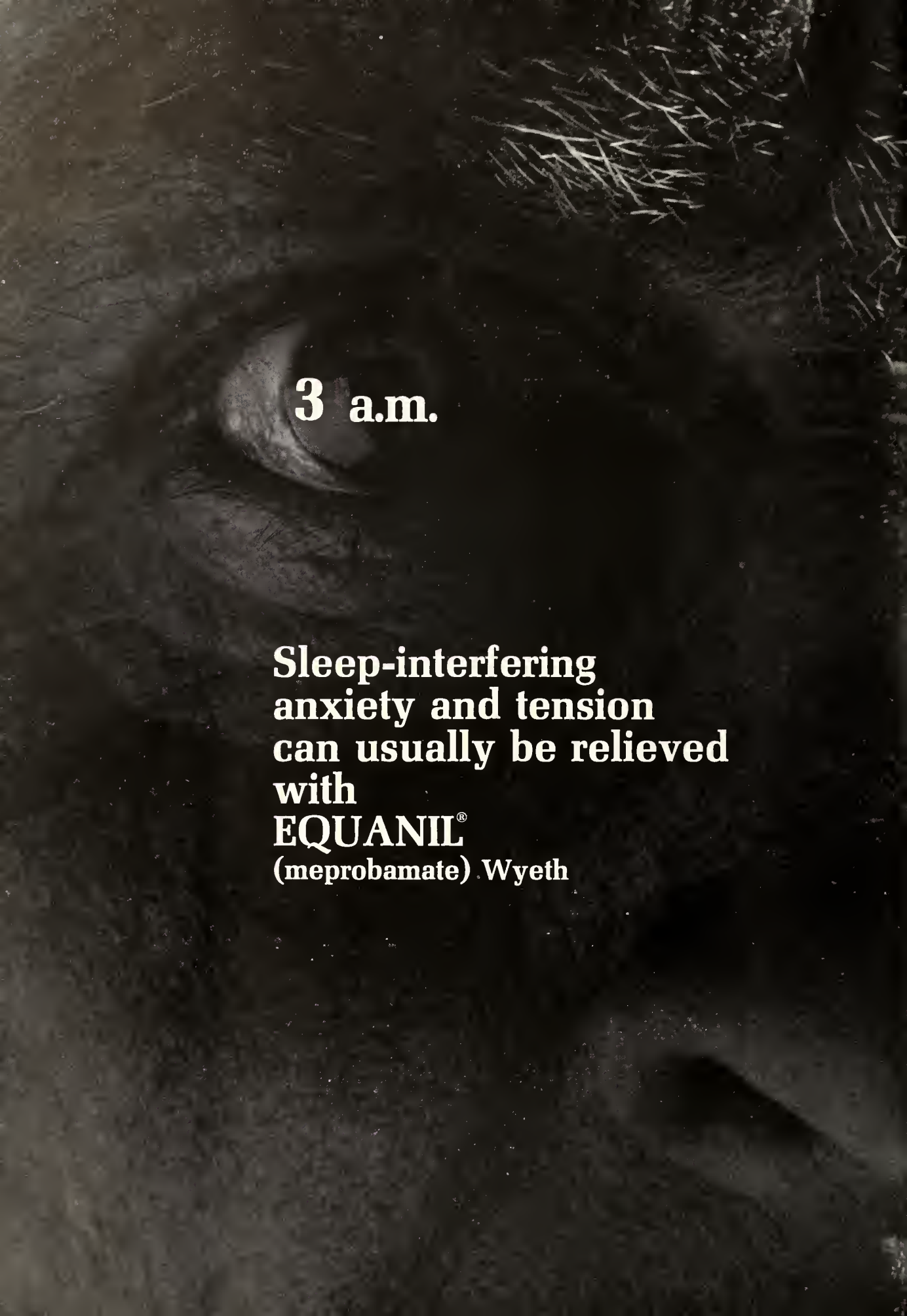
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Vitamin B_2 (Riboflavin)	10 mg
Vitamin B_6 (Pyridoxine HCl)	2 mg
Vitamin B_{12} Crystalline	4 mcgm
Vitamin C (Ascorbic Acid)	300 mg
Niacinamide	100 mg
Calcium Pantothenate	20 mg

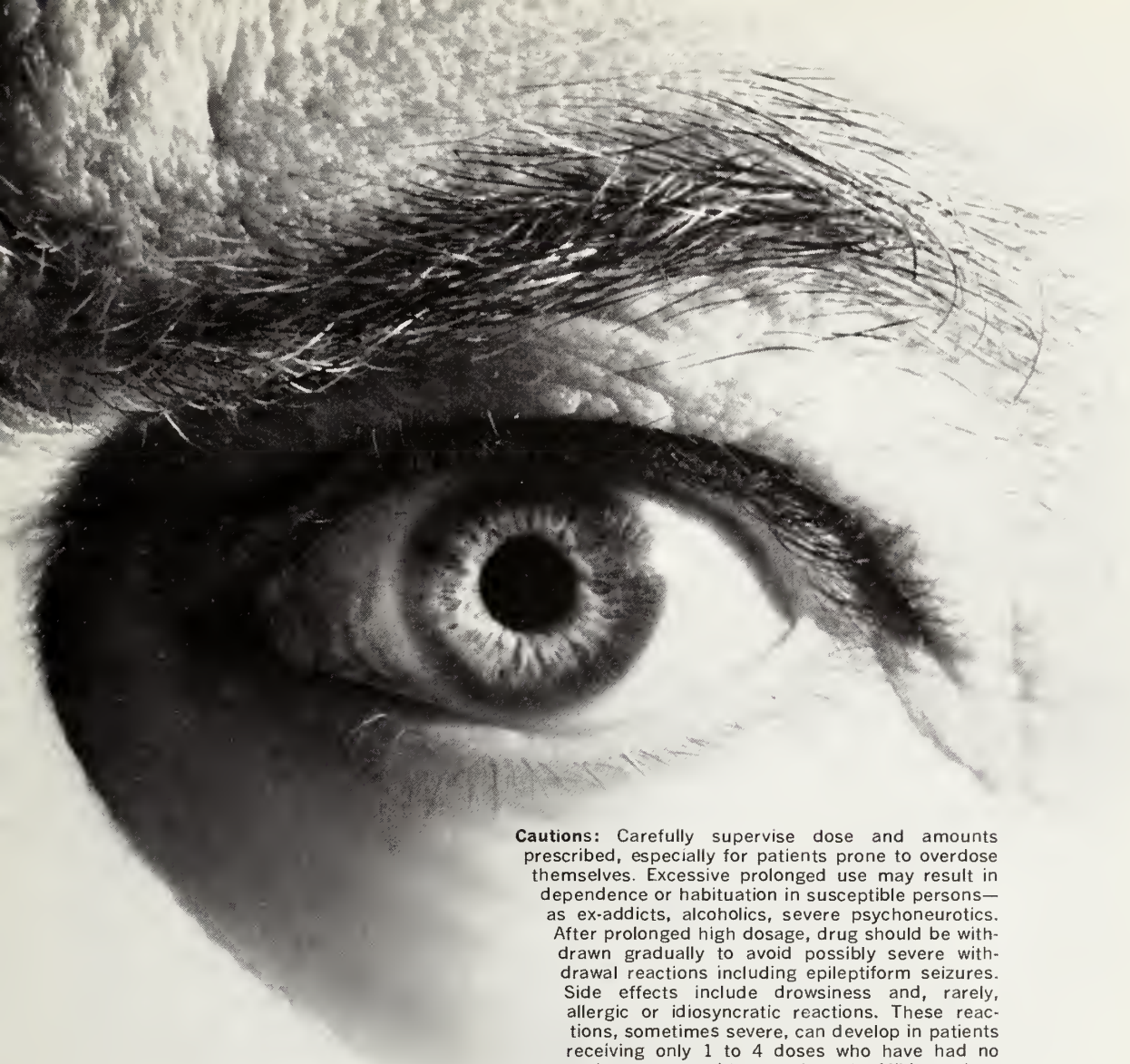
Recommended intake: Adults, 1 capsule daily, for the treatment of vitamin deficiencies. Supplied in decorative "reminder" jars of 30 and 100; bottles of 500.

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Lederle

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3 a.m.
Sleep-interfering
anxiety and tension
can usually be relieved
with
EQUANIL®
(meprobamate) Wyeth



Cautions: Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use may result in dependence or habituation in susceptible persons—as ex-addicts, alcoholics, severe psychoneurotics. After prolonged high dosage, drug should be withdrawn gradually to avoid possibly severe withdrawal reactions including epileptiform seizures. Side effects include drowsiness and, rarely, allergic or idiosyncratic reactions. These reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Mild reactions are characterized by urticarial or erythematous maculopapular rash. Acute non-thrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever have been reported. Meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Warn patients of possible reduced alcohol tolerance. Should drowsiness, ataxia, or visual disturbances occur, dose should be reduced. If symptoms persist, patients should not operate vehicles or dangerous machinery. A few cases of leukopenia, usually transient, have been reported following prolonged dosage. Other blood dyscrasias—aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis and hemolytic anemia—have occurred rarely, almost always in the presence of known toxic agents. One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. Prescribe very cautiously for patients with suicidal tendencies. Suicidal attempts should be treated with immediate gastric lavage and appropriate supportive therapy.

Contraindications: History of sensitivity to meprobamate.

Composition: Tablets, 200 mg. and 400 mg. meprobamate. Coated Tablets, WYSEALS® EQUANIL (meprobamate) 400 mg. Continuous-Release Capsules, EQUANIL L-A (meprobamate) 400 mg.

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Philadelphia, Pa.

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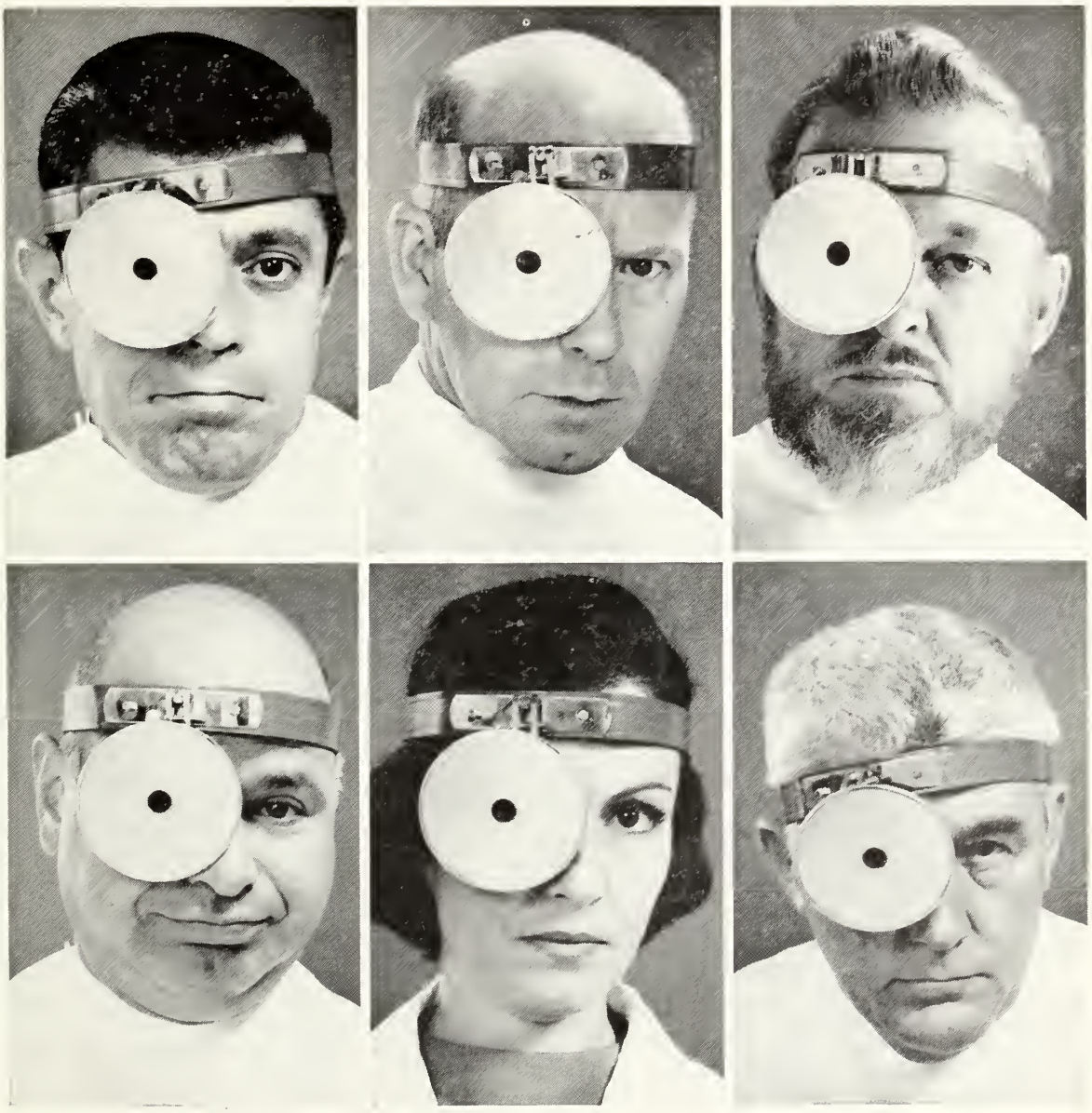
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"All Otolaryngologists are Alike"

Just look at them and you can see how much they have in common. Besides, they all go through pretty much the same training, and pass the same kinds of tests, and measure up to the same sort of standards. Therefore, all otolaryngologists are alike. Right?

Wrong! But that's no more preposterous than what some people say about aspirin. Namely: since all aspirin is at least supposed to come up to certain required standards, then all aspirin tablets must be alike.

Bayer's standards are far more exacting. In fact, there are at least nine *specific differences* involving moisture content, purity, potency and speed of tablet disintegration, which make the manufacture of Bayer® Aspirin so different.

These Bayer standards result in significant product benefits, including gentleness to the stomach and product stability, that enable Bayer Aspirin tablets to *stay* strong and gentle until they are taken.

So next time you hear someone say that *all* aspirin tablets are alike, you can say, with confidence, that "it just isn't so."

You might also say that all otolaryngologists aren't alike, either.





It works.

SUMMARY:

TREST® (METHIXENE HYDROCHLORIDE) relieves G.I. spasm, hyperactivity and associated pain by directly antagonizing the parasympathetic nervous system.

Each tablet contains methixene hydrochloride, 1 mg.

INDICATIONS: Gastrointestinal Spasm and Hypermotility.

CONTRAINDICATIONS: Pyloric obstruction, gastric retention, obstructive organic disease of the gastrointestinal tract, organic cardiospasm, duodenal stenosis, stenosing peptic ulcer, and urinary bladder neck obstruction or prostatic hypertrophy are contraindications to the use of this drug.

WARNING: Overdosage produces anticholinergic side effects. Although the animal reproduction studies are negative, until there is clinical confirmation of safety in pregnancy, this product should not be used in women who may become pregnant unless in the opinion of the physician the benefits outweigh the risks.

PRECAUTIONS: Use only with caution in patients with certain types of cardiovascular disease, since anticholinergic drugs may cause arrhythmias. Extensive clinical studies of TREST have shown no evidence of glaucoma. However, the possibility exists that it can occur since it has been reported as a characteristic side effect of anticholinergic drugs. This product does not replace definitive treatment in organic gastrointestinal disease.

SIDE EFFECTS: Side effects are generally absent when TREST is used in the recommended dosage of 1 to 2 mg. three times daily. Uncommonly, allergy or sensitivity to the drug may be manifested by generalized rash or widespread desquamation. In case of prolonged or massive overdosage, dry mouth, blurred vision, and urinary retention, typical side effects common to anticholinergic drugs, may occur. Occasionally, sensitive patients may notice mild dryness of mouth or slight blurring of vision from doses of 2 mg. or more. Most patients tolerate single doses of 5 mg. without such side effects.

DOSAGE: The usual adult dosage is 1 mg. by mouth three times daily. If necessary, the dose may be increased to 2 mg. three times daily. Pediatric dosage has not been determined.

CAUTION: Federal law prohibits dispensing without prescription.

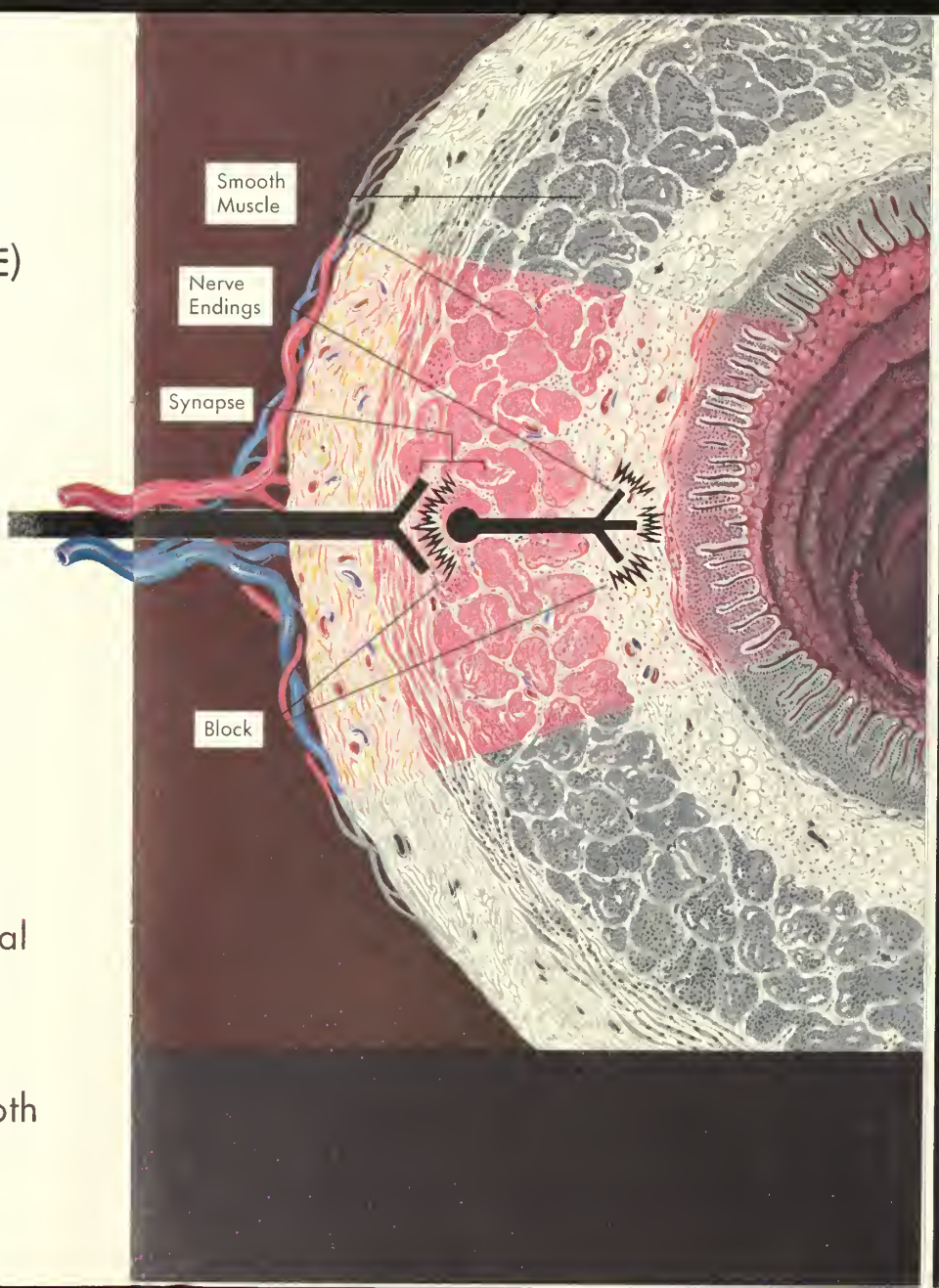
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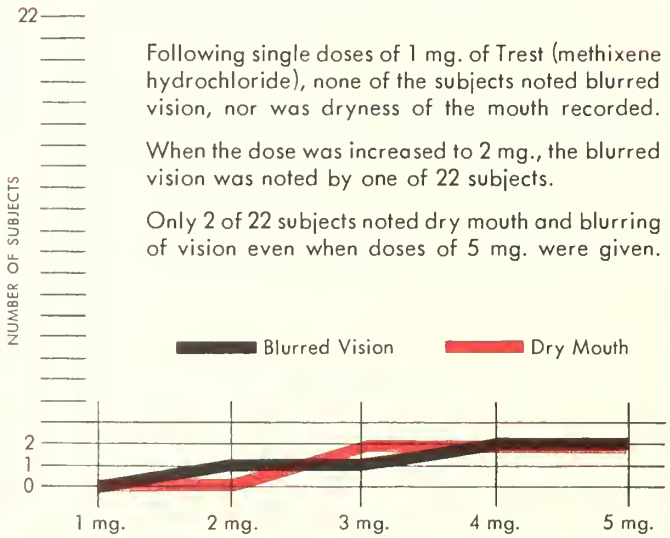
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—Hufford, A. R.:
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Adverse reactions: Drowsiness, ataxia and confusion may occur, especially in elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. Syncope occurs rarely. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis, jaundice and hepatic dysfunction) may develop occasionally, making periodic blood counts and liver-function tests advisable during protracted therapy. Individual maintenance dosages should be determined.

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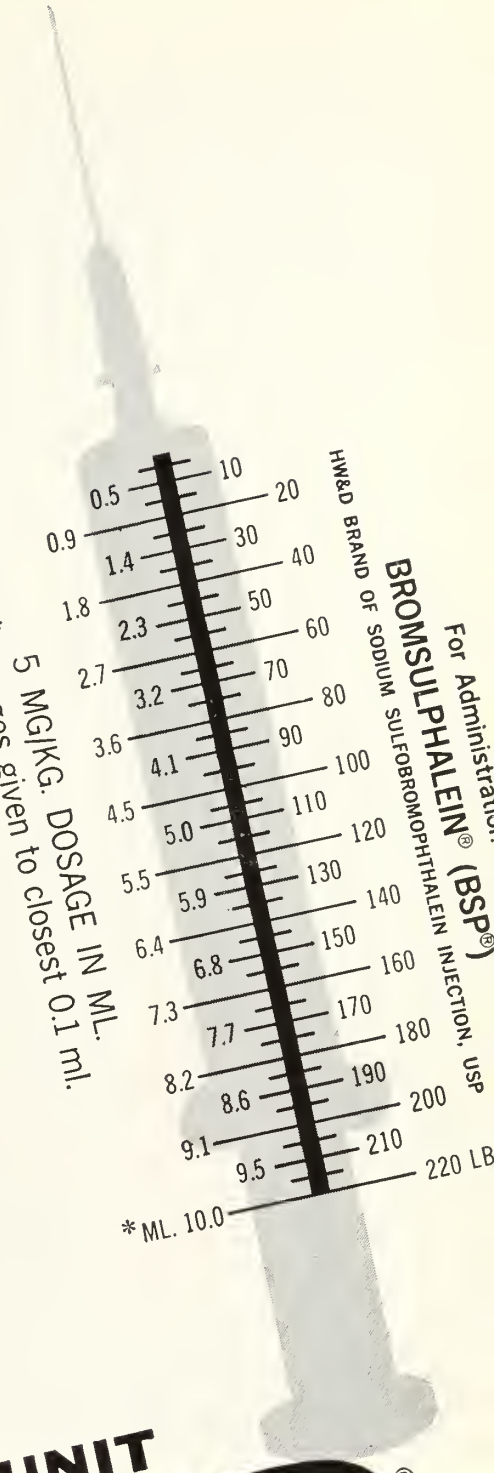
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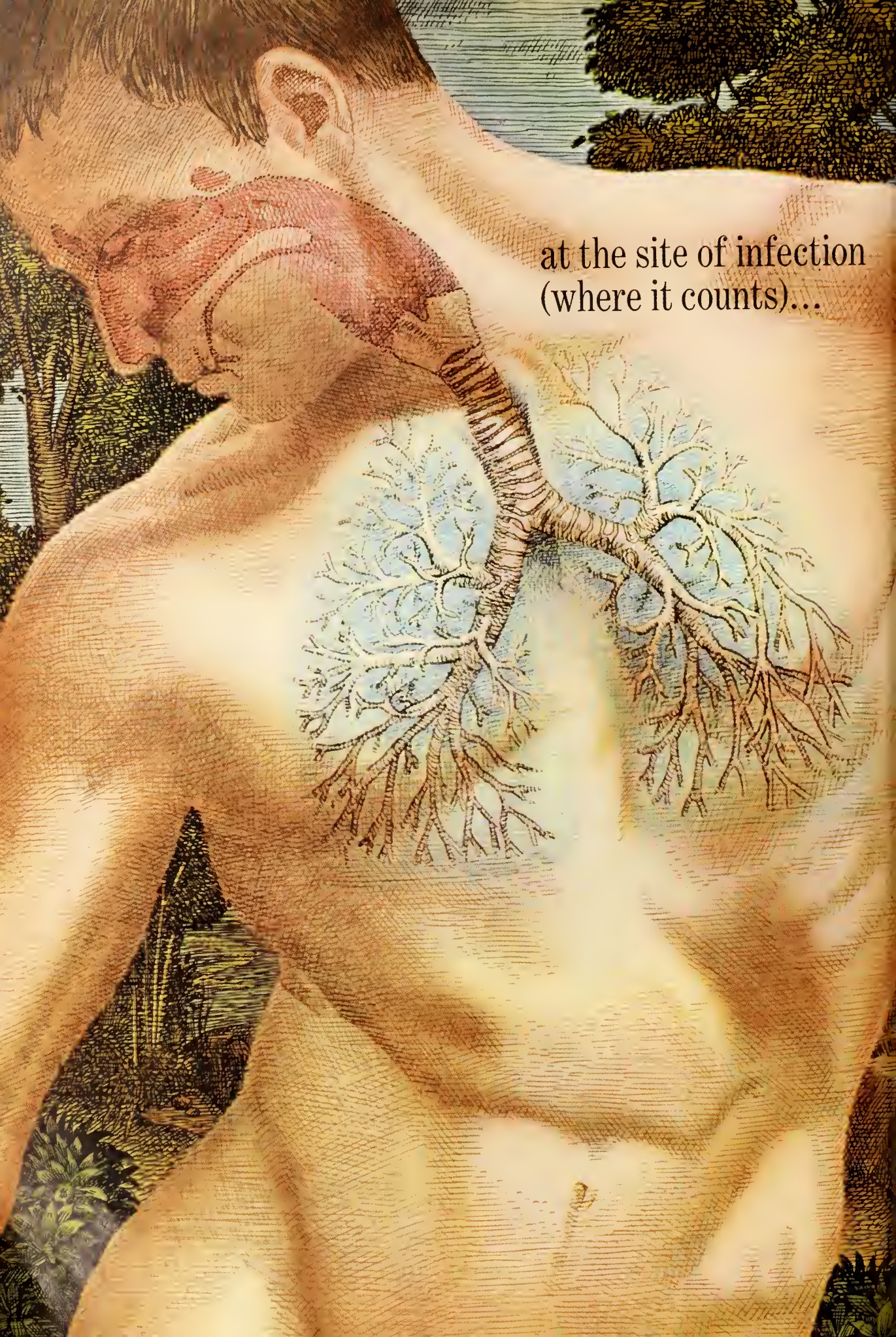
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Indications: Ilosone is indicated in infections caused by microorganisms sensitive to its action (especially staphylococci, hemolytic streptococci, and pneumococci). The drug is therefore useful in a high proportion of bacterial diseases encountered in clinical practice and particularly in the treatment of bacterial infections of the upper and lower respiratory tract and soft tissues.

In the treatment of acute bacterial pharyngitis and tonsillitis, this antibiotic has promptly eradicated the bacteria (streptococci) and has produced a parallel prompt clinical improvement. There have been no group A beta-hemolytic streptococci resistant to this preparation. In beta-hemolytic streptococcus infections, treatment should be maintained for ten days to prevent the development of rheumatic fever or glomerulonephritis.

Erythromycin estolate has proved to be very effective in pneumoeoccus pneumonia and in acute bronchitis with pneumococci on culture. Bronchopneumonia and otitis media in children have responded well to its use.

The antibiotic has been used very successfully in staphylococcus infeetions. Good therapeutic results have been obtained in soft-tissue infections, abscesses, cellulitis, carbuncles, wound infections, and furunculosis.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents. As is the case with any treatment regimen used in these severe conditions, surgical procedures should be performed when indicated, and large dosages of the antimicrobial agents should be employed. In this fashion, Ilosone has been effective in staphylococcus pneumonia, osteomyelitis, septicemia, empyema, and meningitis.

Multiple 500-mg. doses of the drug have been useful in gonorrhea and syphilis. Since penieillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Ilosone is eontraindieated in patients with a known history of sensitivity to this drug and in those with preexisting liver disease or dysfunetion.

Side-Effeets: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have appeared in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly if the drug is readministered to sensitive patients, usually within forty-eight hours. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a seeond time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small eompared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extrahepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeared to be definitely related to use of the drug, laboratory findings we characterized by increased direct-reacting bilirubin, elevat alkaline phosphatase levels, negative or weakly positive cepha flocculation and thymol turbidity tests, elevated serum glutan oxalacetic transaminase levels, peripheral eosinophilia, and n mal cholecystograms.

Individual idiosyncrasy seems evident since jaundice has r been reported in other patients taking prolonged courses of t medication. Patients with chronic infection have been given 1 to 2 Gm. of the drug daily for periods of two to six months, a patients with rheumatic fever have taken prophylactic doses 0.5 Gm. daily for two years without difficulty. In one group 144 patients who received the drug daily for two years, no jau dice was noted. It was of interest that members of six of the patients' families, who were not taking the drug, had episoc of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels we determined in a group of fifty-four adults and children who to 250 mg. of Ilosone daily for an average of sixteen months rheumatic fever prophylaxis. The results were compared wi those of a similar group of forty-four patients who received pe icillin. There were no cases of jaundice in either group. Elevati of SGPT and serum alkaline phosphatase levels during the cour of treatment was observed in one patient treated with Iloso and in two patients treated with penicillin. Seven other patien in the group receiving Ilosone and four others in the penicill group showed elevations in one of the tests at some time durin administration of the drugs.

Very satisfactory therapeutic results, without toxicity, we reported in 102 pediatric patients who received short-term (te day) courses of Ilosone in the treatment of streptococcus infe tions. Results of liver function tests in these patients were co parable to those in a similar control group who had receiv penicillin.

Gastro-intestinal disturbances not associated with hepatic e fects are observed in a small proportion of individuals as a resu of a local stimulating effect of the medication on the alimenta tract; however, the normal intestinal gram-negative bacteri flora is not appreciably altered by erythromycin drugs.

Although allergic manifestations are uncommon with the u of erythromycin, there have been occasional reports of urticari skin eruptions, and, on rare occasions, anaphylaxis.

Administration and Dosage: Ilosone is administered orally.

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For infants and for children under twenty-five pounds of bo weight, the usual dosage is 5 mg. per pound every six hours; f children twenty-five to fifty pounds, 125 mg. every six hou (Tablets Ilosone Chewable should be chewed or crushed a swallowed with water.)

For adults and for children over fifty pounds, the usual dosa of Ilosone is 250 mg. every six hours.

For severe infections, these dosages may be doubled.

When larger doses are indicated, parenteral erythromyc therapy should be considered.

In the treatment of syphilis, the recommended total dosage 20 to 30 Gm. given in divided doses for a period of ten to fifte days. Close follow-up of the patient is necessary since erythr mycin drugs have not had adequate evaluation in all stages syphilis. Examinations of spinal fluid are recommended as pa of the follow-up therapy.

For gonorrhea, 500 mg. four times a day for four days a recommended. In the treatment of gonorrhea, patients with suspected lesion of syphilis should have a dark-field examinati before receiving antibiotics, and monthly serologic tests shou be made for a period of three months.

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Ilosone, 125, for Oral Suspension, N.F., 125 mg. (equivale to base) per 5-cc. teaspoonful, in 60 and 150-cc.-size package

References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:69, 19
2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:398, 19
3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198, 1960.

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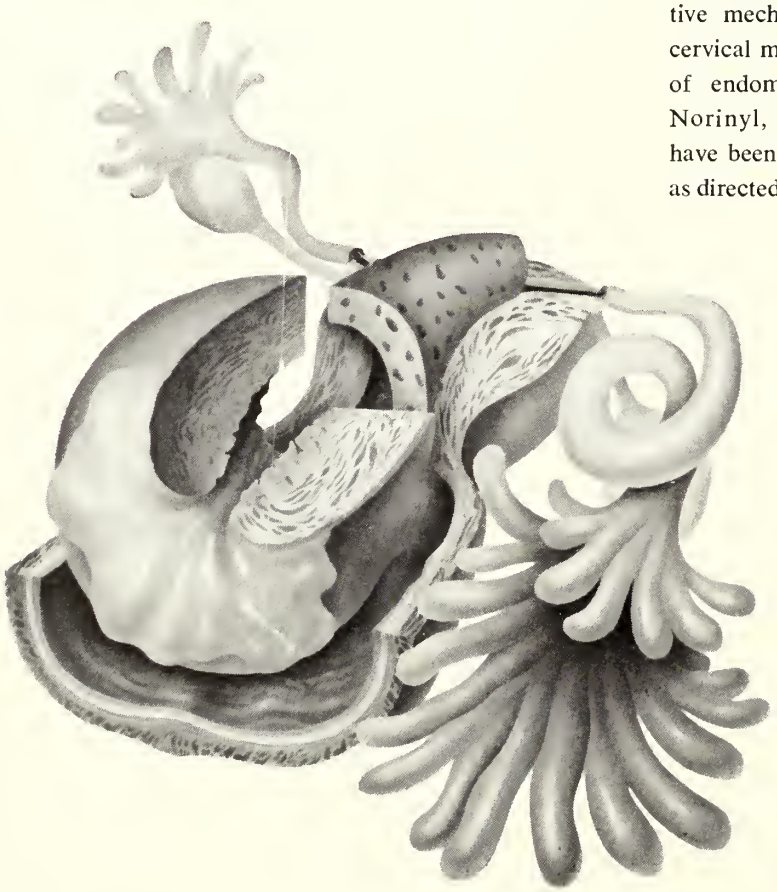
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Warning: Discontinue medication pending examination if there is sudden partial or complete loss of vision, or if there is a sudden onset of proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn.

Precautions: By May 1963, experience with norethindrone 2 mg.—mestranol 0.1 mg. had extended over 24 months. Through miscalculation, omission or error in taking the recommended dosage of Norinyl, pregnancy may result. If regular menses fail to appear and treatment schedule has not been adhered to, or if patient misses two menstrual periods, possibility of pregnancy should be resolved before resuming Norinyl. If pregnancy is established, Norinyl should be discontinued during period of gestation since virilization of the female fetus has been reported with oral use of progestational agents or estrogen. When lactation is desired, withhold Norinyl until nursing needs are established. Existing uterine fibroids may increase in size. In metabolic or endocrine disorders, careful clinical preevaluation is indicated. A few patients without evidence of hyperthyroidism had elevated serum protein-bound iodine levels, which in the light of present knowledge, does not necessarily imply hyperthyroidism. Protein-bound iodine increased following estrogen administration. Bromsulphalein retention has occurred in up to 25% of patients without evidence of hepatic dysfunction. Studies from 24-hour urine collections have shown an increase in aldosterone and 17-ketosteroids and decrease in 17-hydroxycorticoid levels. Thus, Norinyl should be discontinued prior to and during thyroid, liver or adrenal function tests. Because progestational agents may cause fluid retention, conditions such as epilepsy, migraine and asthma require careful observation. Thus far no deleterious effect on pituitary, ovarian or adrenal function has been noted; however, long-range possible effect on these and other organs must await more prolonged observation. Norinyl should be used with caution in patients with bone, renal or any disease involving calcium or phosphorus metabolism.

Side Effects: Intermenstrual bleeding; amenorrhea; symptoms resembling early pregnancy, such as nausea, breast engorgement or enlargement, chloasma and minor degree of fluid retention (if these should occur and patient has not strictly adhered to medication plan, she should be tested for pregnancy); weight gain; subjective complaints such as headache, dizziness, nervousness, irritability; in a few patients libido was increased. In a total of 3,090 patients, 2.2% discontinued medication because of nausea.

NOTE: See sections on contraindications and precautions for possible side effects on other organ systems.

Dosage and Administration: One Norinyl tablet orally for 20 days, commencing on day 5 through and including day 24 of the menstrual cycle. (Day 1 is the first day of menstrual bleeding.)

Availability: Dispensers of 20 and 60 tablets; bottles of 100.

References: 1. Council on Drugs: JAMA 187:664 (Feb 29) 1964. 2. Bryans, F. E.: Canad Med Ass J 92:287 (Feb 6) 1965. 3. Goldzieher, J. W.: Med Clin N Amer 48:529 (Mar.) 1964. 4. Cohen, M. R.: Paper presented at Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965. Reported in Med Sci 16:26 (Nov.) 1965. 5. Hammond, D. O.: Ibid. 6. Rice-Wray, E., Goldzieher, J. W., and Aranda-Rosell, A.: Fertil Steril 14:402 (Jul.-Aug.) 1963. 7. Goldzieher, J. W., Moses, L. E., and Ellis, L. T.: JAMA 180:359 (May 5) 1962. 8. Kempers, R. D.: GP 29:88 (Jan.) 1964. 9. Tyler, E. T.: JAMA 187:562 (Feb. 22) 1964. 10. Rudel, H. W., Martinez-Manautou, J., and Maqueo-Topete, M.: Fertil Steril 16:158 (Mar.-Apr.) 1965. 11. Flowers, C. E., Jr.: N Carolina Med J 25:139 (Apr.) 1964. 12. Goldzieher, J. W.: Appl Ther 6:503 (June) 1964. 13. The Control of Fertility. Report adopted by the Committee on Human Reproduction of the American Medical Association. JAMA 194:462 (Oct. 25) 1965. 14. Flowers, C. E., Jr.: JAMA 188:1115 (June 29) 1964. 15. Merritt, R. I.: Appl Ther 6:427 (May) 1964. 16. Newland, D. O.: Paper presented at Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965. Reported in Med Sci 16:26 (Nov.) 1965.

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this issue: the nose as a shock organ

the nose as a shock organ

by Charles J. Shagoury, M.D., Chelmsford, Massachusetts



"Is it a cold, hay fever, or has he been reprimanded by his boss?" Occasionally, you will ask yourself this question when confronted by a patient with abrupt onset of rhinorrhea, nasal obstruction, and sneezing. Usually the history will elucidate the problem, but examination of the nose will often provide valuable clues to the correct diagnosis.

The nose is a shock organ in a double sense. First, it is in the nose that the confrontation takes place with the surrounding atmosphere. For twenty-four hours a day, the nose must meet the varying challenges of the inspired air, containing perhaps noxious chemicals, dust, dirt, bacteria, viruses, fungi, and industrial pollutants of all kinds, and render it clean, virtually sterile, and fit for the sensitive alveoli of the lungs. Whatever the temperature or humidity of the atmosphere, the nose must transmit it to the lungs at approximately 98°F, and with a humidity of approximately 40%.[1]

Second, in particularly susceptible patients, the nose acts as a shock organ in a manner totally unrelated to its normal function. Persons with hay fever respond to ordinarily harmless materials by extreme nasal congestion, with marked rhinorrhea and violent spasms of sneezing. In some patients, exposure to threatening or disagreeable agents, or situations involving mental conflict may result in a reaction which is exclusively nasal, with swelling of the turbinates, and marked hypersecretion.[2]

Nasal symptoms usually result when the nose seeks to perform its function of getting rid of noxious and dangerous elements in the atmosphere, and prevent their admission to the trachea and lungs. Small particles are removed by the mucous coating which blankets the nasal passages. This mucous blanket contains a bacteriostatic agent, lysozyme, which destroys most air-borne bacteria.[3] The mucinous content renders the surface sticky, causing dusts and small particles to adhere. It has been postulated that this process is rendered more effective through adsorption because of a surface electrical charge on the nasal mucosa.[4] The cilia then sweep the particulate matter to the pharynx. The nose can prevent entrance into the lungs of particles as small as three microns in diameter, but smaller particles elude the nasal barrier. Most bacteria causing respiratory infections are one to three microns in diameter, but since they usually are inhaled in clumps, they are efficiently removed as a rule. Viruses, which are of the order of 1/1000 of this size, are less efficiently dealt with, unless they occur in very large aggregates.[5]

The nose will react in a more or less similar manner, whatever the nature of the offending agent, whether it be an irritant chemical, virus, pollen, or distasteful emotional situation. In acute coryza, the most characteristic sign is a profuse watery discharge. The volume of secretion may rise from practically nothing to nearly 60cc in twenty-four hours.[6] The mucous membrane is reddened and engorged, while the turbinates are markedly swollen. After the first day or two, the secretion becomes thicker, yellowish, and more difficult to expel. The surface cells are largely destroyed, contributing to the copious discharge, which now also contains numerous inflammatory cells which have migrated to the area. Gradually, over a period of a few days, or a week, the flood abates, the swelling and redness subside, and the nasal epithelium resumes a healthy appearance.

Repeated attacks of rhinitis, particularly if there is an underlying element of obstruction, may result in chronic rhinitis. The mucous membrane is constantly swollen and reddened. Sticky, mucopurulent secretions are a continuous feature, and the glandular elements are hypertrophied. Commonly, the mucosal surface takes on an irregular, rounded "mulberry" appearance, and nasal passages are occluded by the swollen turbinates and redundant mucosa.

While all of us are susceptible to colds, the victim of hay fever, or allergic rhinitis, displays a marked nasal reaction to materials in the air which leave his associates unaffected. In such a patient, the nasal mucosa has become an allergic "shock" organ. Contact with the nasal allergen causes local release of histamine, with vasodilatation, increased vascular permeability, and severe nasal congestion, similar to the "wheal" and "flare" reactions in the skin, when the epidermis is the allergic shock organ. While we eagerly await the coming of spring, the hay fever sufferer dreads the blooming season, whose invisible pollens are poisons to his sensitive nose. His neighbor's cat or dog may provoke paroxysms of uncontrollable sneezing. In some cases a specific allergen is not identified, but the triad of rhinorrhea, nasal obstruction, and sneezing is present.[7] The nose in these cases shows a pale, boggy, edematous mucosa, with a thin mucoid secretion. The mucous membrane shows extreme retractility to 1% cocaine or ephedrine. If the patient has medicated himself prior to examination, the nasal passages may appear abnormally patent, or show exaggerated congestion due to rebound reaction. The secretion may show a large number of eosinophils particularly after an attack of sneezing or rhinorrhea. Touching the mucosal surface, especially of the inferior turbinate, leaves an indentation, showing that the swelling is due to stasis and edema, rather than actual hyperplasia of the mucous membrane as in chronic hypertrophic rhinitis. Though the pale swollen mucosa is the hallmark of allergic rhinitis, as usually seen by the physician, exposure of allergic subjects to their known allergens results in a brief hyperemic phase, followed by pallor and edema.[8]

In the later stages of allergic rhinitis, the chronic edema of the mucous membrane results in the formation of polyps, clusters of grape-like masses hanging from the roof of the nose, with a pale glistening surface, contributing significantly to the sense of nasal obstruction and oppression.

A large group of patients show symptoms of nasal congestion when confronted by adverse life situations.[9] In these unfortunate persons, anxiety, frustration, and resentment are often accompanied by a runny nose and nasal obstruction. Lacrimation adds to the nasal stuffiness. This autonomic response, mediated by the parasympathetic nervous system, may be part of a general parasympathetic reaction, or may possibly represent in part, a symbolic effort to wash out and crowd out the offending situation.

Nasal congestion may also occur in some patients at times of sexual stimulation, and in women during menstruation and pregnancy, even to the point of epistaxis.[10] The relationship is obscure; castration results in atrophy of the nasal glands, and their action is inhibited by the hormones of the hypophysis and the thyroid.[11] The nose may be the shock organ in drug therapy. The nose may also bear the brunt of industrial stress, in those who work in a hot dry atmosphere, or those exposed to acid fumes, or irritating dusts. As the air in our cities is increasingly polluted by exhaust fumes, and industrial irritants, whole urban populations may suffer from chronic nasal and respiratory symptoms.

Of course, nasal reactions are not just infectious, or allergic, or emotional. Particularly in the chronic sufferers, there is an interdependence of all three. Death of a relative, or other psychic shock can pre-

(concluded on following page)

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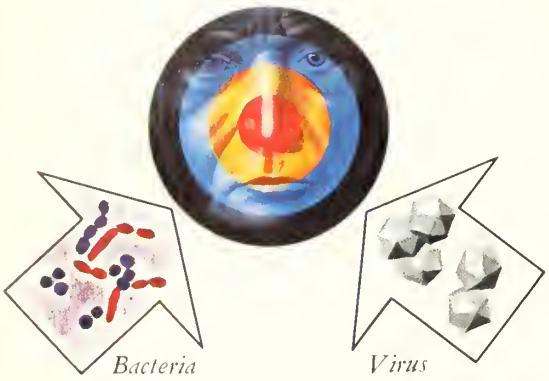
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cipitate an attack of rhinorrhea in hay fever sufferers.[12] Others develop attacks of vasomotor rhinitis following change in temperature, chilling, or exposure to the sun, or simply warm bedclothes.

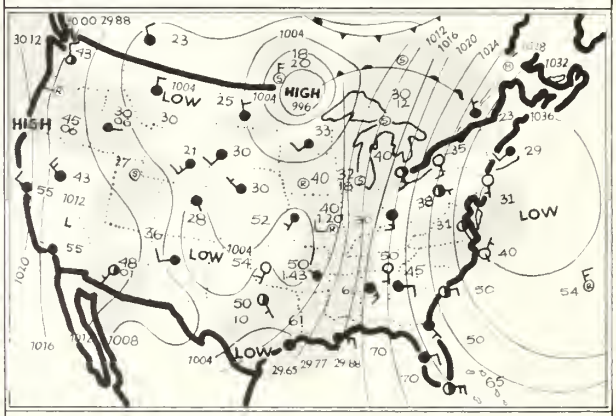


The complex interplay of allergy and infection is largely unclear. Allergy to the viruses and bacteria which cause infection has been postulated, but is difficult to demonstrate. The swollen obstructed allergic nose is more susceptible to infection. At the same time, infection often precedes or precipitates an allergic attack. Exposure of a susceptible patient to an allergen can activate latent virus organisms leading to infection.[13] This "jolt" reaction represents a summation of an allergen and a virus leading to symptoms in the nose as a shock organ, which neither could have produced alone. In childhood, repeated attacks of bronchitis and colds may be inflammatory reactions to an allergen, or precipitated by exposure to an allergen. These children may later develop typical allergic rhinitis. On the other hand, children with typical allergic histories, eczema, asthma, and allergic familial backgrounds, may later develop typical infectious rhinopathies. Skin tests in such patients are usually positive.

Nasal reactions are part of the systemic response of the patient to an unwelcome stimulus. In cases of respiratory infection and exposure to atmospheric irritants, the reactions are useful, and to some extent desirable. They are usually self-limited, disappearing within a few days, or upon removal of the provoking agent. Here the distressing symptoms can be ameliorated with appropriate decongestant agents, or, in the case of severe or complicated respiratory infections, antibiotics may be given, with reasonable confidence of a cure. On the other hand, when nasal reactions are the peculiar response of an individual to an allergen, or to an undesirable situation, they serve no useful purpose. The nose here is a shock organ in a stressful situation, but can furnish no response of value. It merely causes the patient symptoms which add to his problems. In these cases, symptomatic treatment is of great benefit, but often the underlying faulty pattern of response cannot be altered. Such a patient may literally be considered to be paying his way in life "through the nose."

References 1. Maures, E. R., Mendez, F. C., Jr., and Hilsinger, R. C.: Importance of the Nose in Filtering and Humidifying Inspired Air. Ohio State Med. J. 61:41-42. 2. Holmes, T.,Goodell H., Wolf, S., and Wolff, H. G.: The Nose. Springfield, Ill. 1950 Charles C. Thomas p. 10 ff. 3. Boies, L. H. R.: Fundamentals of Otolaryngology. Phila. W. B. Saunders Co. 1954 p. 160. 4. Proetz, A. W.: Applied Physiology of the Nose. St. Louis 1941 Zimmerman-Petty Co. p. 6. 5. Spikard, A.: The Common Cold, A Survey. Disease of the Chest 48:545-49. Nov. 1965. 6. Ibid. 7. Bourdial, J.:Role of Allergy in Upper Respiratory Tract Infection. Europa Med. Paris 4:75-80 1965. 8. Holmes, et al. The Nose p. 22. 9. Ibid. p. 320. 10. Proetz, A. W. op. cit. p. 321. 11. Ibid. p. 320. 12. Rees, Linford J.: Physiogenic and Psychogenic Factors in Vasomotor Rhinitis. J. Psychosomatic Research 8:101 Sept. 1964. 13. Horesh, A. J.: Allergy and Infection. An Allergy 23:621-35 Dec. 1965.

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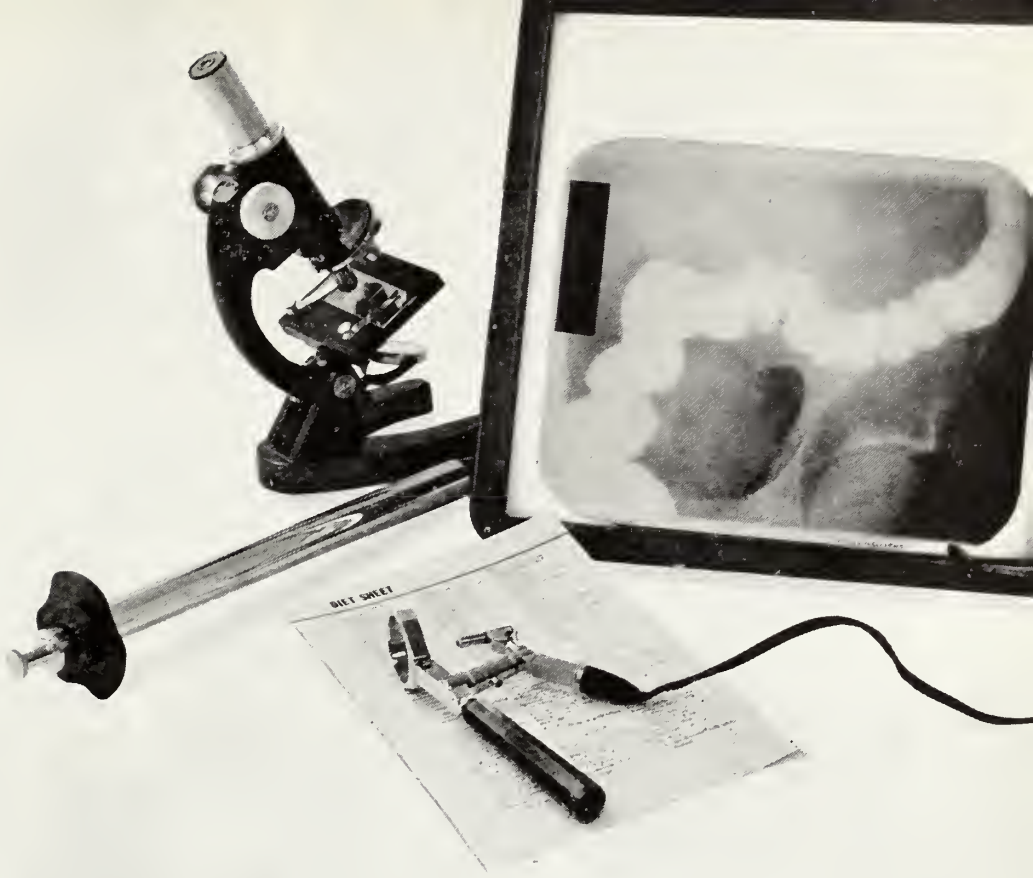
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Postoperative Care of the Tracheostomy

Loring W. Pratt, M.D.*

Proper postoperative care may make the difference between success and failure of a surgical procedure. This is particularly true of the tracheotomy. Skillfully administered care during the postoperative period may make for a completely uneventful course in a patient who might become unnecessarily complicated, and perhaps even lost, without meticulous attention.

Tracheotomy is performed most frequently to circumvent fixed obstructions of the upper airway or to provide for relief of fluid obstructions of the lower airway. By this procedure the normal air conditioning functions of the nose are lost and skillful care of the tracheostomy requires that the physician must remedy this deficiency in the inspired air. He must supply warm, humid, clean air for his patient to breathe, in addition to caring for the technical problems associated with a tracheostomy.

The first and most important part of the care of the postoperative tracheostomy is CONSTANT OBSERVATION. This can be accomplished only by the presence of a nurse and/or attendant at the bedside at all times. In the modern hospital situation, where intensive care units are standard, one or more patients may be constantly observed and cared for by the team of nurses in attendance. This provides a great saving in nursing personnel.

Constant observation must be provided when a tracheostomy tube is in place in children, the unconscious, the aged and the debilitated. Only in those patients who make an adequate recovery, and who are able to learn to care for the tracheostomy by themselves, is it safe to terminate constant attention. However, in those who are physically and psychologically able to assume the care of their own tracheostomies, it should be recognized that part of their rehabilitation includes learning to care for the appliances employed, and developing confidence in their abilities to manage their own care. This is especially true and particularly important for those who must continue to wear tubes permanently or for prolonged periods of time. With members of this group, instruction should begin at the first practical moment so that they do not become too long dependent upon the care and solicitous attention of others, which inevitably makes it much more difficult for them to ultimately take over their own care.

Suction of the tracheostomy is a routine method of care and most important to the patient. The usual order calls for suction to be used every two hours and as necessary. This in effect provides regular cleaning of the tube and the trachea throughout the day and night. Use of the suction tube stimulates the patient to cough and this helps with the removal of accumulated tracheobronchial secretions. The suction should, ideally, be passed down only as far as the distal end of the prosthetic tracheal tube, and the patient should be encouraged to cough the secretion up to where it may be caught by the catheter. If, however, the patient is unable to raise secretion to this point, the catheter should be passed down into the trachea, and the material aspirated. Usually, this maneuver produces violent coughing and helps with the collection of tracheal secretions.

Proper handling of the catheter should be uniformly followed in suctioning below the cannula. The suction apparatus should be connected with a "Y" tube between the suction tube and the catheter. When the catheter is introduced into the trachea, the vent arm of the "Y" tube should be wide open. Only after the catheter has been passed down the trachea as far as necessary should the open arm of the "Y" tube be occluded, thus starting the suction effectively and then, with the "Y" tube occluded and the suction working, the catheter should be removed slowly and methodically. The tracheostomy tube should be suctioned within ten seconds or so and the patient then given a chance to recover for a minute or

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Fig. 1 shows proper catheter and "Y" tube. With suction turned on and the tip of the catheter occluded the catheter does not collapse near the "Y" tube.



Fig. 2 shows improper catheter for use in suction of tracheostomy. When the tip of the catheter is occluded the catheter collapses near the "Y" tube.

two before the suctioning process is repeated. When the suction catheter is in the tracheostomy tube little oxygen is able to pass by for ventilation of the patient, thus prolonged suctioning may produce hypoxia which the tracheostomy was designed to relieve. In addition, the spasm and cough evoked by the stimulation of the catheter may be most distressing to the patient, and may bother him much less if produced in divided doses. If the catheter is introduced with the suction working effectively all the way down, the tip will often catch and grab onto the wall of the trachea, the carina or adhere to some other part of the tracheobronchial tree and thereby unnecessarily traumatize the delicate membrane lining the tracheobronchial tree and complicate the postoperative course.

It is possible to suction either bronchus selectively, in most individuals. In general, if the patient's head is



Fig. 3 shows routine setup for bedside suction apparatus for tracheostomy. A duplicate setup should be provided and kept separate for oral suction.

turned to the right, the catheter will readily pass into the left main bronchus. If the head is straight or turned to the left, the catheter will usually pass into the right main bronchus. It is sometimes useful to gently twist the neckplate of the tracheostomy tube. If it is twisted in a counter-clockwise direction the catheter will be directed toward the left main bronchus and if it is twisted clockwise it will be directed toward the right main bronchus. This is often helpful in selectively suctioning an area which is in need of special attention.

There are some important facets to the proper suctioning of the tracheostomy. First and most important is the choice of catheter which should possess certain characteristics. First, firmness at the end which attaches to the suction tube is essential (Fig. 1). If an ordinary catheter is used, it may collapse and the suction will not be effective (Fig. 2). Second, the tip of the catheter should have only one hole, which should be an opening at the extreme end. Multiple hole catheters, while they may be ideal for drainage of a body cavity, are utterly useless in suctioning inspissated secretion from a trachea. When the distal hole becomes plugged with secretion, air will enter the proximal hole and reduce the effectiveness of the suction.

The table for the suction catheter should be set up by the bedside with a bottle of 1:750 Benzalkonium Chloride and a bottle of Ringer's Solution (Fig. 3). The catheter should be stored in the Benzalkonium Chloride and rinsed with Ringer's Solution before and after use. Experimental work has demonstrated that Benzalkonium Chloride, in this concentration, is not injurious to the tracheobronchial membrane and that rinsing of the catheter is unnecessary but, in spite of this, we prefer to rinse the catheter in Ringer's Solution prior to use.

The problem of asepsis in managing tracheostomies is a most important one. It is the feeling of the author that the usual case should be handled in a very clean

but not aseptic manner. A similar setup should be made for a catheter to be used exclusively for oral suction and the two catheters should not be used interchangeably. Sterile catheters should be supplied twice a day and at any time when gross contamination from any source has taken place.

In desperately ill patients, such as those on whom precautions are customarily used (i.e. burns), the nurse should be gowned and gloved and the entire routine of tracheostomy care should be carried out in a rigid aseptic manner. It has been recommended that in these situations the tracheal catheter should be discarded after each use and replaced with a sterile one. This of course adds many complications to an already complex situation; but in the desperately ill patient such precautions should be observed.

Cleaning of the inner tube of the tracheostomy set is of crucial importance. This is done as a matter of routine every two hours and more frequently if necessary. The technique is relatively simple, and should be done by passing a brush or a knotted pipe cleaner through the tube following its removal from the outer tube, in conjunction with hydrogen peroxide or a good detergent. A straight pipe cleaner will not clean the tube adequately. Materials for cleaning the inner tube should always be kept by the bedside, and the inner tube should be cleaned and replaced without delay after its removal from the outer cannula. If the inner tube is left out for any appreciable length of time, crusting of inspissated mucus may occur on the inside of the outer tube and it may then be difficult or even impossible to replace the inner tube.

When a plastic or rubber tube, without inner cannula, is used, it is necessary to remove the whole tube and replace it with another in order to properly clean it. Plastic tubes seem to accumulate less secretion on the inner walls than silver or rubber tubes and for this reason have some advantage in the management of the patient. Rubber tubes accumulate crusts more readily than either silver or plastic. Our choice is the silver tube with an inner cannula which may be conveniently and easily removed for proper cleaning.

Humidity is of prime importance in the successful management of the tracheostomy. Its skillful application is of vital importance to the patient and may be more crucial than some other seemingly important items. Proper humidification may be accomplished by administrations of water via different routes.

First, the patient must be kept adequately hydrated, as the dehydrated patient produces thick, sticky mucus which readily dries and is tenacious and difficult to remove by suction.

Second, water may be applied as a vapor directly to the tracheobronchial tree. In patients receiving oxygen this is of special importance, as the cold gas which is expelled from oxygen systems is nearly anhydrous and must be both humidified and warmed in order to provide adequate humidity at body temperature. Proper humidification of cold oxygen is difficult unless the vapor is added as a mist by means of a nebulizer. In lieu of more elaborate and more convenient appliances, the application of a wet gauze sponge over the tracheostomy is of considerable help in the humidification of inspired room air. An attempt at improved humidification was seen in the old-fashioned croup tent in which hot steam was introduced into a tent of sheets wrapped around the patient. A great improvement was noted when cold steam or fog was introduced into plastic tents by mechanical fog generators and the added danger of boiling water was eliminated from the proximity of the bedside. An efficient nebulizer introduces adequate water vapor into either oxygen or compressed air and these devices have an important place in the oxygen systems in use today. They are, however, liable to malfunction if not properly cleaned and maintained. For this reason, special care should be taken to see that they are not only in the system, but that they are delivering the water vapor adequately. The most efficient device is the ultrasonic fog generator, with which it is possible to produce the most dense sort of mist which passes easily and freely into the tracheobronchial tree. At times it stimulates coughing, a helpful adjunct to therapy in certain cases, and in all instances it introduces an enormous amount of water into the tracheobronchial tree. Therapy with this equipment is usually intermittent, a treatment being given for fifteen minutes four times a day. Care must be taken, however, in using this sort of therapy with small children, as it is possible to introduce sufficient water into the tracheobronchial tree, and to have it absorbed, to produce enough hemodilution to endanger the child.

Third, one method of adding water directly to the tracheostomy is by the addition of Ringer's Solution. This may be instilled directly into the tube, on inspiration, so that it will pass directly into the trachea and topically wet the secretions. One or two cubic centimeters of Ringer's Solution may be added in this manner approximately every half hour. After the solution is instilled the patient usually coughs and suction may be used to pick up whatever mucus and secretion is raised by the combined effect of the tracheobronchial lavage and the cough. This is especially helpful in relieving the problem of tracheal encrustation, once it has become a problem. Of course, the best treatment is prevention, by the skillful application of the techniques previously described. It is also helpful at times to add sodium lauryl sulphate to the instilled solution for its beneficial effect as a wetting agent. In addition, Penicillin may be added to the instilled solution. When Penicillin is used in this way, it should be in a concentration of 200 to 400 units per cubic centimeter, as stronger solutions have been reported to produce bronchial irritation when used topically.

The tracheostomy makes a convenient route for the

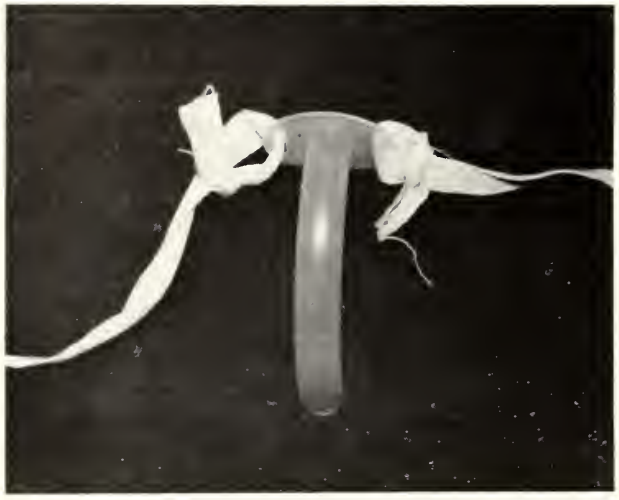


Fig. 4 shows a simple method of attaching tapes to the neckplate of the tracheostomy tube. A slit is made near one end of the tape and the other end of the tape is passed first through the slot of the neckplate and then through the slit in the tape. It should be done as on the right so that the raw end of the tape is next to the neck where it does not interfere with postoperative care.

administration of certain topical medications. The addition of Alevaire® is of great help in those situations where a wetting agent is needed. Mucolytic agents such as Pancreatic dormase (Dornavac®), or Acetylcysteine (Mucomyst®), or Crystallized Trypsin may be incorporated in the mist which is supplied to the tracheostomy and good reports have been noted of their effect when administered by this route. Caution must be exercised in the use of these agents, as the effectiveness of their mucolysis is such that the patient may be flooded by a gush of secretion which may obstruct the major air passages unless scrupulously and promptly removed by suction. At present, there is doubt that these compounds should be instilled via the ultrasonic generated mists. In addition, topical use of antibiotics and other agents may be had via the tracheostomy.

The complication of crusting may be avoided by skillful management of humidity. The problem arises more frequently in debilitated, infected and postirradiation patients than in others, and they should be treated with special care so far as humidity is concerned.

The tapes of the tracheostomy tube should be tied snugly, in a square knot. Nurses sometimes endeavor to accommodate the patient's whim by leaving the tracheostomy tube tied loosely, and occasionally, with a bow knot. This makes it easier to change the tapes and for the patient to adjust it to his own idea of proper tension. This also sets the stage for a disaster, as, with a loosely tied tube, the patient may cough the tube out of the trachea into the neck where it will be obstructed by the tissues of the neck and may be difficult to replace. If the tapes are tied in a bow, the patient may roll over in bed, untie the bow and then cough the tube completely out. It is even possible for the patient to untie the tracheostomy tape thinking that it is the knot of the tie of the hospital gown and thereby loosen and lose the tube. In the patient who really needs an auxiliary airway this would be a complete disaster unless someone might be at hand who could immediately replace it. A simple method of attaching the tapes to the neckplate is to make a small slit in the end of the tape and pass the end of the tape through both the slot of the neckplate and the slit in the tape and pull it up tight (Fig. 4).

A sterile sponge should be used under the neckplate of the tracheostomy tube to keep it separated from the patient's neck. This provides for the absorption of exudate from the tracheostomy wound and reduces contamination of the wound from external sources. One of the nonadherent dressings is especially helpful for this purpose, although ordinary gauze may be used with satisfaction. In some cases, the neckplate of the tracheostomy tube may produce a pressure point on the neck, or the keeper may irritate the chin (especially in fat babies) and these points must also be protected with gauze.

Although regular and frequent changes of the inner tubes are of prime importance in the management of the tracheostomy, there is relatively little advantage in very frequent changes of the outer tube. In past years a fetish of daily change of tracheostomy tubes was the rule. In more recent years, this has not been slavishly carried out, and there appears to be little difference in the postoperative progress of the patient. The author has seen one patient who had worn a silver tracheostomy tube continually for four years without ever changing it. She had cleaned under the tube and around it and her skin was in perfectly good condition and clean. Plastic tubes, without inner tubes, are easier to maintain without regular changes.

Proper adjustment of the tracheostomy tube is an essential part of the care of the patient. A tube which is properly placed should enter the lumen of the trachea. A tube which is either too long or too short is both uncomfortable and dangerous. If constant pressure is placed in either position an erosion may form which will cause bleeding, ulceration, chondritis and possibly even perforation of the trachea. A more likely and disturbing problem is the development of a polyp of granulation tissue which may bleed and in rare instances, obstruct the tracheostomy. If the tube is long enough to reach the lumen of the trachea, but is found to rest on either wall, it is sometimes possible to adjust it by blocking up the neckplate of the tube with gauze. If this fails to solve the problem a tube of different curve may be tried.

The use of ventilator assisters in conjunction with tracheostomy adds an occasional complication and a word or two about the special requirements of these cases is in order. Some ventilator assisters must be connected to the tracheostomy tube with a gas-tight fit in order to provide efficient ventilation. They should also

be connected by means of a flexible connecting unit so that the change of position of the patient during the respiratory cycle will not pull or tug on the tracheostomy tube, as such force, with the leverage provided by this mechanical equipment will readily and surely produce damaging changes in the tracheal mucosa. It is, therefore, most important to adjust this apparatus so that a minimum of trauma is inflicted.

It is often helpful to use a cuffed tube. This may be an ordinary endotracheal tube, a regular tracheostomy tube with a cuff slipped on it, or one of the plastic or rubber tubes with one or two cuffs moulded into the tube itself. If a one cuff tube is used the cuff should be deflated for at least five minutes of each hour in order to prevent erosion of the tracheal mucosa from pressure of the cuff. If the double cuff tubes are used, air should be alternated between the cuffs and this should be changed every half hour, in order to protect the trachea from damage. Attempts to produce experimental lesions in canine tracheae by this method have been unsuccessful, but comparison of the response of a healthy canine trachea with that of the debilitated human trachea in an individual who is already infected is hardly adequate.

Summary

The proper care of the postoperative tracheostomy is a simple matter if it is recognized that its object is to provide an accessory breathing route for the patient which bypasses the nose and thus loses its physiological functions of warming, cleaning and humidifying the air. Thus, the physician must supply humidified air, if possible warmed, and certainly in a clean environment. Via the tracheostomy it is possible to clean the tracheobronchial tree of tenacious secretions which cannot be removed by the patient, and the equipment and care must be arranged to satisfactorily accomplish these functions, with the minimum amount of trauma to the patient and with the maximum simulation of a normal physiologic state. Of course, the most important item in the case of the tracheostomy is to maintain continually an open airway to provide for adequate exchange of the patient's respiratory gasses.

Conclusions

The following should be a basis for routine orders on the postoperative tracheostomy:

1. Constant observation.
2. Suction every two hours and as necessary.
3. Clean and change inner tube every two hours and as necessary.
4. Force fluids.
5. Continual humidity to tracheostomy.
6. No sedation, unless especially ordered by the attending physician.
7. Obturator of tracheostomy tube should be kept constantly at the bedside.
8. Keep a sterile matching tracheostomy tube set by the bedside constantly, with the tapes tied to it and ready for instant use.
9. Keep a sterile Kelly clamp or Trousseau dilator by the bedside.
10. If a cuffed tube is used, deflate the cuff for three minutes every twenty minutes.
11. Oxygen may be used if necessary, at discretion of nurse.

References

Webb, W. R.: New Mucolytic Agents for Sputum Liquefaction. Postgrad. Med. 36, November 1964.

Limber, C. R., Reiser, H. G., Roettig, L. C. annd Curtiss, G. M.: Enzymatic lysis of Respiratory Secretions by Aerosol Trypsin. J.A.M.A. 149: 816, 1952.

Shaw, P. B., Hurst, G. A. and LeMaistre, C. A.: Clinical Evaluation of a New Mucolytic Agent. (N-acetyl-L-cysteine). Am. Rev. Resp. Dis. 86:115, 1962.

Head, J. M.: Tracheostomy in the Management of Respiratory Problems. New Eng. Jour. Med. 264:587, 1961.

Dugan, J. D. and Samson, P. C.: Tracheostomy: Present Day Indications and Technics. Am. Jour. Surg. 106, August 1963.

Dykstra, C. L.: Tracheotomy in Infants and Children. Eye, Ear, Nose & Throat Monthly 45, September 1966.

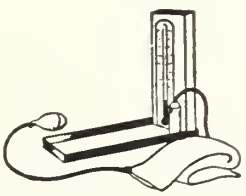
DeCancq, H. G., Jr.: Tissue 'Snowplowing': A Post-Tracheotomy Complication. Am. Jour. Dis. of Children. 108:94-97, 1964.

Putney, F. J.: Complications and Postoperative Care After Tracheotomy. A.M.A. Arch. Oto. 62:272-276, 1955.

Jackson, C. and Jackson, C. L.: Diseases of the Nose, Throat and Ear.

Pratt, L. W.: Tracheotomy. Indian Jour. Med. & Surg. 26: January 1961.

177 Main St., Waterville, Maine 04901



Hemolytic Anemia in Valvular Heart Disease

RICHARD T. CHAMBERLIN, M.D.*

The practice of medicine has become increasingly complicated. No longer may the new practitioner leave the academic medical centers with the common misconception that a large segment of the knowledge he acquired there would be useless to him in the "simple" everyday practice of medicine.

One of the many contributing factors to this development is the ease of transportation which allows for the referral of complicated cases to the medical center for diagnosis and treatment. These cases will in most instances be returned to the care of the referring physician who now in turn must be prepared to continue the same high level of care to which he entrusted his patient.

To illustrate these well known facts the following case is presented. It is representative of a relatively new syndrome of hemolytic anemia following open heart surgery for the replacement of pathologic cardiac valves. Study of this phenomenon has subsequently led to new knowledge of red blood cell survival in a turbulent circulation and the discovery of cases of a previously unrecognized compensated hemolytic state in patients with valvular heart disease, even before any surgical intervention.

CASE REPORT

A 21-year-old white married male was admitted to Thayer Hospital with a chief complaint of weakness. There was a history of rheumatic fever as a child. He was considered well until the age of nineteen when symptoms of rapidly worsening congestive heart failure developed. Evaluation at the Massachusetts Memorial Hospital in Boston determined the etiology of his congestive failure to be rheumatic heart disease with both mitral and aortic insufficiency. After appropriate cardiac catheterization studies were completed, surgical replacement of the mitral valve with a number three Starr valve using complete cardiac bypass was accomplished in March 1965. The patient's preoperative hematocrit was 40%. He tolerated the surgery and immediate postoperative period satisfactorily. One month after surgery a brief episode of thrombophlebitis subsided with appropriate therapy, and two months after surgery two separate episodes of auricular fibrillation were successfully converted with Quinidine. In May of 1965 his complete blood count was: Hemoglobin 13.6 gm.%, red blood cell count 4.6 million per cubic millimeter, white blood cell count 5,700, with a normal differential. His urinalysis was normal. In November of 1965 he began to complain of weakness. This rapidly progressed and in December the patient's complete blood count was: Hemoglobin 9.4 gm.%, red blood cell count 3.1 million per cubic centimeter, white blood cell count 4,650, with a normal differential, reticulocyte count 6.3%. There was a questionable history of an upper respiratory tract infection two weeks prior to admission and he was febrile at 99.0° F. He was admitted to the hospital with a provisional diagnosis of subacute bacterial endocarditis. There was no history of ulcer disease or of tarry stools, and no personal or family history of a bleeding tendency. There was a history of passing dark urine intermittently for about a month, but no change in stool color or evidence of jaundice.

Physical examination showed the patient to be pale. Blood pressure was 110/60, pulse 90 per minute and regular, weight 136 lbs. The skin revealed no petechiae, ecchymoses, or splinter hemorrhages. A few small, non-tender posterior cervical lymph nodes were palpated. Examination of the head, ears, eyes, nose and throat was normal. The chest was clear to ausculation and percussion. The left border of cardiac dullness was seen and felt six centimeters to the left of the mid-clavicular line in the sixth intercostal space. There was a palpable and audible systolic click. A grade three blowing systolic murmur was heard at the apex with radiation to the axilla. There was a faint decrescendo diastolic murmur at the base and along the left sternal border. The second pulmonic sound was greatly accentuated. There was no hepatosplenomegaly. There was no clubbing of the fingers or toes, and no peripheral edema.

Laboratory data: Hemoglobin 9.6 gm.%, red blood cell count 3.3 million per cubic centimeter, white blood cell count 5,053, differential count, 63% polymorphonuclear leucocytes, 3% stab forms, 29% lymphocytes, 1% monocytes, 2% basophiles, and 2% eosinophiles. The red blood cells shower anisocytosis, hypochromia, polychromasia, and many bizarre deformed cells on smear (schistocytes). Sedimentation rate 53 mm. per hour. Hematocrit 30%. Reticulocyte count 9.1%. The urinalysis revealed a cloudy dark brown urine with a specific gravity of 1.028. There was 100 mg.% of protein, a negative test for sugar, and a pH of 5.5. The test for occult blood was strongly positive and the sediment revealed over 200 red blood cells per high power field. There were red blood cell casts. Ten stool specimens were negative for occult blood. The electrocardiogram revealed changes of both left and right ventricular hypertrophy. The chest x-ray showed generalized cardiomegaly with prominence of the proximal pulmonary vessels. Fasting blood sugar, blood urea nitrogen, bilirubin, total protein with A/G ratio, and bromsulphalein retention tests were all normal. The serum iron was 65 microgram % with a total iron binding capacity of 396 microgram percent. The direct Coombs' test was negative. Red blood cell fragility was normal. Red blood cell survival was markedly reduced at 18 days half life. Cultures of blood, throat and urine were negative.

Treatment was continued with digitalis, hydrochlorothiazide and prophylactic penicillin, and ferrous sulphate five grains three times a day; high fluid intake, and alkalinization of the urine were started. The patient improved slowly in respect to his strength, and his hemoglobin rose to an average of 10 to 11 gm.% from December 1965 to the present time. Reticulocyte counts during this time remained between 8 to 9%. In March 1966 a repeat red blood cell survival revealed a half life of 13 days, and in October 1966 the serum iron was 33 microgram percent. The patient noted during this time that any period of increased activity was associated with a return in the dark color of the urine.

DISCUSSION

The subject of hemolysis of red blood cells in valvular heart disease has had a rapidly evolving history since Rose et al first reported its occurrence in 1954, following the insertion of a Hufnagel ball valve prosthesis.[1] This work was confirmed in the dog by Stohlman and his associates as reported in 1956.[2] A similar hemolytic state has been subsequently reported in vari-

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ous combinations of cardiac pathology and their surgical treatments including the repair of ostium primum defects,[3] aortic valve replacement alone,[4,5] combined valvular replacements,[6] and, although relative immunity of mitral valve replacement from this syndrome has been claimed, it too has been described.[7]

Many of the early investigators of the problem thought that mechanical destruction of the red blood cells in the valve mechanism was the basis of the anemia. However, Brodeur's study discovered that the survival of red blood cells was shortened in patients with aortic valve disease prior to surgery.[6] More recently, hemolytic syndromes were observed in a case following an unsuccessful mitral valvuloplasty in which no prosthetic material was used,[8] and in a case of combined aortic and mitral valvular disease prior to any surgery.[9] The hemolysis in the former case was corrected when the damaged mitral valve was subsequently replaced by a prosthetic one. This has led to the current hypothesis that turbulence of flow itself may be the etiology of the hemolysis and the whole concept of red blood cell survival has been re-examined.[9,10]

Characteristics of the syndrome include anemia, reticulocytosis, abnormal red blood cell forms (schistocytes) in the peripheral smear, hemoglobinuria, hemosiderinuria, low plasma haptoglobins, and low serum iron levels. Clinical symptoms aside from the anemia itself have included the observation that increases in physical activity are associated with an increase in the degree of hemolysis as evidenced by the increased color of the urine and a fall in hemoglobin levels in the blood.[5,9,10]

Treatment evolves around the attempts to diagnose and correct the existing valvular defect either by replacement of the damaged valve itself, or in some instances, by the repair of a previously dislodged prosthetic valve. Bed rest, high fluid intake, and iron replacement therapy together with whatever cardiac care measures are already necessary, are the only medical measures available for treatment.

The patient demonstrated all of the usual features of the syndrome described. The importance of recognizing the syndrome is evident, since the admitting diagnosis of possible subacute bacterial endocarditis would have involved the patient in a long course of unnecessary antibacterial treatment. It is impossible to determine if the hemolysis in this patient is secondary to subsequent dislodgement of the prosthetic valve alone or to some combination of other valvular disease such as aortic regurgitation. Further cardiac catheterization studies are planned for the near future.

Summary

A case describing the features of a hemolytic syndrome which developed following the replacement of a diseased mitral valve with a prosthetic valve is presented. Pertinent recent literature on the subject is briefly reviewed. The fallacy of a physician's assumption that such knowledge is esoteric and of no practical value is self evident when one considers the ever increasing possibility that patients with such "new" diseases are likely to come under any physician's care, regardless of the distance of his practice from a medical center.

References

1. Rose, J. C., Hufnagel, C. A., Fries, E. D., Harvey, W. P., Partenope, E. A.: The Hemodynamic alterations produced by a plastic valvular prosthesis for severe aortic insufficiency. Journal of Clinical Investigation 33:891, 1954.
2. Stohlman, F., Sarnoff, S. J., Case, R. B.: Hemolytic syndrome following insertion of a lucite ball valve prosthesis in the vascular system. Circulation 13:586, 1956.
3. Verdon, Capt. T. A., Forrester, Lt. Col. R. H., Crosby, Col. W. H.: Hemolytic anemia after open heart repair of ostium primum defects. New England Journal of Medicine 269:444, 1963.
4. Cooley, M. H.: Intravascular hemolytic syndrome following aortic valve replacement. Archives of Internal Medicine 118:486, 1966.
5. DeCesare, W., Rath, C., Hufnagel, C.: Hemolytic anemia of mechanical origin with aortic valve prosthesis. New England Journal of Medicine 272:1045, 1965.
6. Brodeur, M. T. H., Sutherland, D. W., Koler, R. D., Starr, A., Kimsey, J. A., Griswold, H. E.: Red Blood Cell Survival in Patients with Aortic Valvular Disease and Ball Valve Prosthesis. Circulation 32:570, 1965.
7. Williams, J. R., Morrow, A. C., Braunwald, E.: The Incidence and Management of Medical Complications following Cardiac Operation. Circulation 32:608, 1965.
8. Ziperovich, S., Paley, H. W.: Severe Mechanical Hemolytic Anema due to Valvular Heart Disease Without Prosthesis. Annals of Internal Medicine 65:342, 1966.
9. Miller, D. S., Mengel, C. E., Kremer, W. B., Gutterman, J., Senningen, R.: Intravascular Hemolysis in a Patient with Valvular Heart Disease. Annals of Internal Medicine 65:210, 1966.
10. Pirofsky, B.: Hemolysis in Valvular Heart Disease. Annals of Internal Medicine 65:373, 1966.

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Hospitals—Hill-Burton To Medicare

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Last year marked the 20th Anniversary of the enactment of the Hill-Burton Act which became the law of the land on August 13, 1946. As of March 1966 a total of 8 139 projects, providing 446,199 beds, had been approved since the beginning of the program. These were built at a total cost of $7,900,000,000 of which the federal share was $2,500,000,000. Originally the program was limited to the construction of hospital and public health centers.

Hospital facilities prior to World War I were far from satisfactory and, such as they were, poorly distributed. Generally the hospitals, except for the larger metropolitan units, were little more than accommodations for patients, an operating room or two, and often no laboratory facilities. Between 1928 and 1938 nearly 800 hospitals had been discontinued as a result of the depression. The war prevented any correction of this situation and, only after the close of hostilities, was it possible for any program for improvement to be inaugurated.

With the enthusiastic support of the American Hospital Association, a bill, known as the Hospital Survey and Construction Act, was introduced jointly by Senator Lister Hill, a Democrat, and Representative Harold Burton, a Republican and, with bipartisan support, passed Congress and was signed by President Truman.

The first year of the implementation of the program in 1948, Congress appropriated a total amount of $75 000,000. This was allocated to the states on the basis of population, modified by the factor of per capita income. For example, a state, such as New York, with a large population and a high per capita income received relatively less than Mississippi which had a low per capita income. Each state established its own Hill-Burton Commission which had the authority of allocating this money, on the basis of need, with participation of federal funds in the cost of construction of between 33% and 75%. Maine, in 1948, received a total appropriation of federal funds of $454,438 which the Commission, allocated on a 55-45% basis to those projects which seemed most necessary. Later the ratio was changed to the 50% basis. The total amount of federal money has varied from time to time, depending upon the amount of Congressional appropriation. In 1955, recognizing the overemphasis on acute care beds, four separate categories were added. These were for chronic disease facilities, nursing homes, diagnostic and treatment centers, and rehabilitation. In 1966, a fifth category for modernizing of old facilities was added. This past year, 1965-1966, a total of $1,775,580 was allocated to Maine, of which $930,667 was for hospital and public health centers; $200,000 for modernization; $461,562 for long-term care facilities; $117,771 for diagnosis and treatment centers; and $64 580 allocated to rehabilitation.

In 1948 ten million people lived in 600 hospital service areas which had no acceptable general hospital beds, whereas currently only about two million people are in 100 such areas.

The Federal Hospital Council acts directly on requests for funds for research and for demonstration projects. Some 175 such programs have been funded at a cost of $33 400,000. The Council also has the authority to grant money for area-wide planning for hospital and health facilities.

As time went on it became very obvious that, on a country-wide basis, we were building too many acute-care beds, and not enough facilities for chronic and long-term care. The "Survey" portion in the original Act had been often relegated to the background. In addition, there was nationwide concern over the ever-rising costs of hospital care which had reached almost into the stratosphere. Careful studies indicated five reasons for this increased hospital cost.

Great technical advances in the preceding four or more decades had provided us with greatly improved methods of caring for the sick and injured. It is indeed a far cry from the earlier attempts to save a severe cardiac case to modern open-heart surgery, and a far cry from the earlier treatment of pneumonia to its present shortened hospital stay by the use of antibiotics. Diagnostic procedures have been vastly improved. These technical advances have resulted in lower morbidity and lessened mortality. But, each advance has been expensive. Scientific equipment and additional skills both cost money.

In addition there has been a great increase in the number of nurses and paramedical personnel required in the hospital to provide this modern care for our patients. The former low wage scale of all hospital personnel was quite archaic and required upgrading. Increased wages and salaries became added factors in increased hospital costs. These causes are understandable and justifiable.

However, another reason found for increased hospital costs, has been over-utilization, or misuse of facilities, constructed for acute care. At times this may be the fault of the physician who finds it is easier to take care of a patient in the hospital than it is in his home, or may be inclined to keep a patient in the hospital longer than is absolutely necessary. At times the lack of insurance coverage for out-patients has been a factor. Also there has been a lack of development of ambulatory or outpatient facilities. These were encouraged in the Diag-

*From Thayer Hospital — Read before Educational Seminar, Maine Association of Medical Record Librarians at Waterville, Maine on November 15, 1966.

nostic and Treatment category of the Hill-Burton Program but frequently ignored. If developed and used, Diagnostic-Treatment facilities would make certain hospital admissions unnecessary.

But, the most significant factors in high cost of hospital care have been in over-construction or unnecessary duplication of facilities.

There is a city on the Eastern seaboard in which there are several cobalt bombs. Now a cobalt bomb is a very useful item in handling certain selected cases of malignancy, sometimes in addition to conventional intensive x-ray therapy. But, often and especially when duplicated, this becomes what one might call a prestige item. Careful investigation in this city which has all these cobalt bombs, revealed that the total treatment time used by these units for the entire area did not exceed a total of one hour per week. Now the average cost of each unit is at least $100,000, with necessary replacement of the unit in perhaps five or six years. This certainly would seem an unnecessary extravagance.

Another cost that has been criticized is that of duplication of facilities for open-heart surgery. One could mention a large Midwestern city which has ten excellent hospitals. Eight of these ten hospitals have added facilities for open-heart surgery. Each unit costs a minimum of $100,000 and takes ten or more technically trained persons to operate it. It has been found in that Midwest city, the eight hospitals with open-heart surgery facilities do not average one such operation per week for the entire city. And there have been many other, and simpler, examples of reduplication.

These conditions became generally recognized and led to the concept of area-wide planning for hospital and health facilities particularly from a long-range viewpoint. This has become very successful and has gained widespread acceptance throughout this country. For the most part this is on a voluntary basis, except for New York State which has a law that no new hospital facilities can be built, even with private funds, unless they pass State Area Planning Commission.

Here in Maine, a few years ago, such a project was set up at the State level and has been most successful. Of course, it is only advisory and consultive. But it has done a great deal to discourage unnecessary hospital construction, or unnecessary duplication. Our commission has a widespread representation of business and social interests throughout the State, together with representatives of the medical profession, and the hospital field. It can only advise and has no power to prevent unnecessary construction. However, a careful appraisal followed by advice has been able to prevent many wasteful expenditures of money in unneeded construction. At the same time the planning council has been able to assist in planning of new projects in areas needing them and to advise as to the type or scope of the services needed. Its consultation services are always available whenever needed. The initiation of continuous statewide planning for additional hospital and health facilities has brought about a sense of orderliness to the improvement and distribution of facilities within each state.

At the present time its interest has been largely in trying to affect modernization of many hospitals which have, at least, in part become obsolete; and in the encouragement of building small community health centers, which can serve as diagnostic units, provide emergency care, and having adequate ambulance service connecting to a regional center hospital which has adequate facilities both in equipment and in medical skills.

Among the advantages of the regional concept are improvement in quality of care; ability to attract and retain needed medical and nursing skills as well as paramedical personnel; the avoidance of costly duplication of equipment and services. In other words this should provide the best of medical care for patients in the most economical manner possible.

A major concern at present, is the impact of Medicare on our health facilities and services. Obviously this is a revolutionary concept and only after observations have been made on the actual use of hospitals and extended care facilities, will it be possible to measure with any degree of precision the impact of this new law. Many fear the greatest problem will be lack of professional personnel. All recognize the great lack of physicians which is going to take a number of years to correct. Emphasis on research, perhaps triggered by the lure of federal money, seems to have diverted the interests of many medical schools from training doctors for clinical practice. Actually the greatest need is for what might be called "family care physicians."

The Citizens Commission on Graduate Medical Education has recommended "sweeping changes" aimed at correcting this situation in a report to the Board of Trustees of the American Medical Association. These include the following:

1. Train primary physician specialists to provide and supervise total, comprehensive medical care for the individual patient.

2. Eliminate internships while revamping graduate medical education into a comprehensive, single period of training planned as a unified whole.

3. Create a special commission responsible for the whole range of graduate medical education.

4. Establish "corporate responsibility" in each teaching hospital to provide comprehensive and unified graduate medical education.

Everybody knows of the shortage of nurses, now estimated by the federal people at well over 100,000. It seems obvious we have to accept the pattern of echelon, or team-nursing, using the baccalaureate degree registered nurse for administrative and teaching duties, and continuing to develop the former three-year-program type of nurse to head up nursing units with teams of practical nurses and nurses aides. There is also a great

shortage of technologists and technicians in such fields as radiology, clinical laboratory, etc. There is a great dearth of medical social workers, as well as physiotherapists and occupational therapists. There would seem to be much merit in training, on a shorter term basis, physiotherapy aides, occupational therapy aides, medical social aides, etc. all of whom could work under the certified professional in that particular field. There is some opposition to this idea, largely centered in Washington, but it certainly seems impossible today, and for a long time to come, to train sufficient numbers of people in these higher grades to adequately staff the programs needed in many areas.

Medicare has become a law of the land and is here to stay. We must accept it and endeavor to assist in its development in a practical way, making use of all these facilities. This may take five to seven years but seems the only way to assure people in all areas and in all economic situations of the adequate and skilled medical and hospital care that they deserve.

This requires sound area-wide planning for hospital and health facilities and may well be the last remaining bulwark against complete governmental control of our hospitals and the medical profession.

Thayer Hospital, Waterville, Maine 04901

Heart Month — February 1967

"Give So More Will Live" is the slogan for the 1967 Heart Fund Campaign which is conducted nationally during February.

* * * * *

Don't fear heart disease, fight it. Support the Heart Fund, your best defense against the nation's number one health enemy.

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The Maine Heart Association distributes 35 free educational leaflets concerning the heart and circulatory system. Your Heart Fund finances this work.

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According to the Maine Heart Association, statistics show that heart and circulatory diseases kill four times as many persons as cancer.

* * * * *

In 1966 the Maine Heart Association distributed more than 275,000 free educational leaflets on heart and circulatory system subjects. The Heart Fund finances this service.

* * * * *

The first heart pump in Maine which makes possible open heart surgery, was purchased in 1958 by the Maine Heart Association with Heart Fund money.

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Open Heart surgery was made possible in Maine by contributions to the Heart Fund.

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Contributions to the Heart Fund finance the research, education and community service programs of the Maine Heart Association.

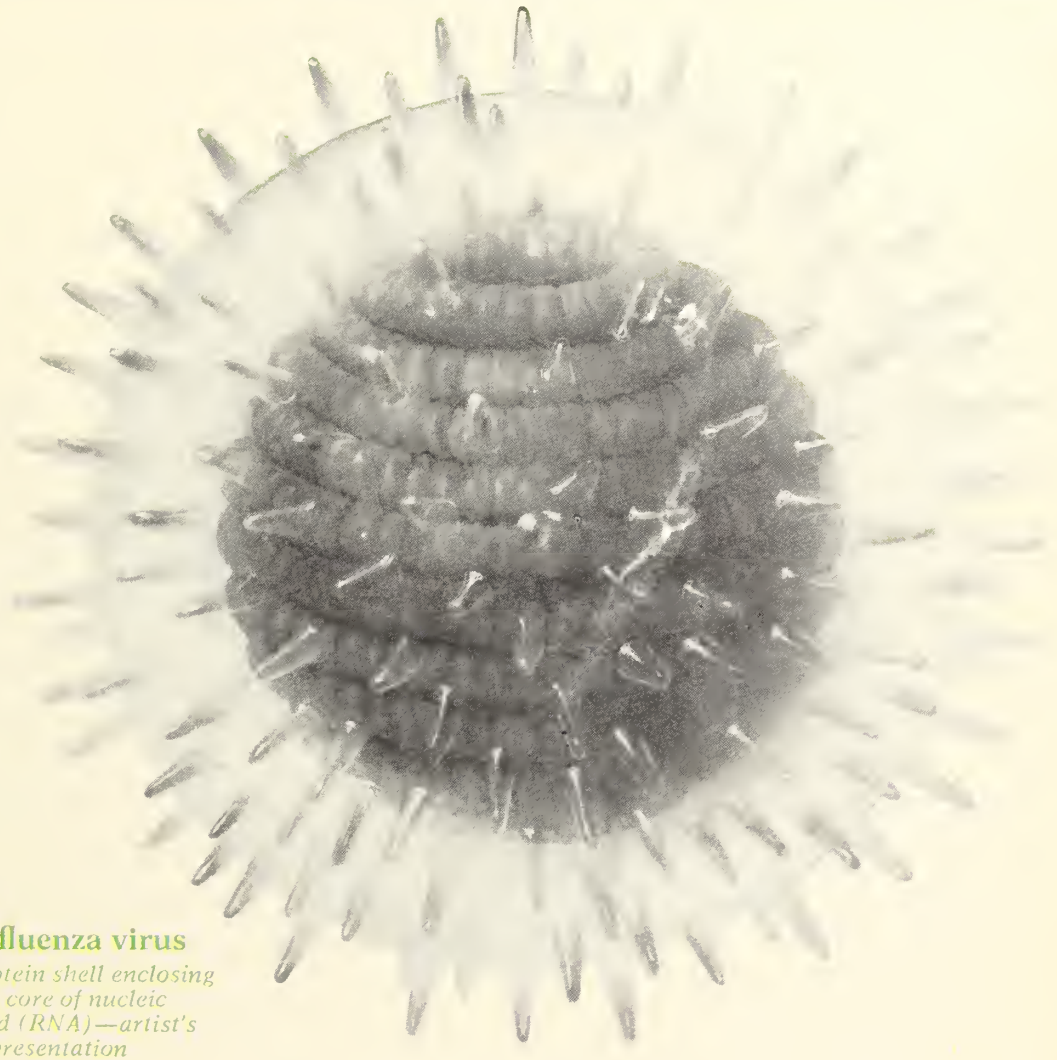
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New from Du Pont

Symmetrel

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The first oral chemical virostat for the prevention of influenza A_2



Influenza virus
Protein shell enclosing the core of nucleic acid (RNA)—artist's representation

The incidence of influenza A_2. In this country, where influenza is one of the leading causes of morbidity, influenza A_2 (Asian) continues to be a serious medical problem. In 1957 influenza A_2 was responsible for approximately 40,000 excess deaths in a three-month period. Since that year the most prevalent influenza virus has been A_2 (Asian).

What is Symmetrel®? "Symmetrel" (amantadine HCl) is a new synthetic chemical which acts as a molecular barrier to virus penetration. It provides for the first time specific oral medication for the prevention of respiratory infections caused by influenza A_2 (Asian) viruses—an entirely new approach in preventive medicine.

For prescribing information, see last page of this presentation

What Symmetrel® (amantadine HCl) means to you

...the first and only oral chemical agent to prevent influenza A_2 (Asian).

...not a vaccine or antibiotic, but a new synthetic chemical unrelated to any other chemotherapeutic agent.

...unique mode of action: prevents virus penetration of the host cell without affecting vital cell functions.

...specifically active against all influenza A_2 viruses tested to date.

...not indicated for the prevention of influenzal or respiratory illness other than influenza A_2 or for the treatment of established disease.

...does not interfere with normal antibody response; acts in concert with pre-existing antibody.

What Symmetrel® means to your patient

...possible immediate influenza A_2 protection when taken following suspected contact.

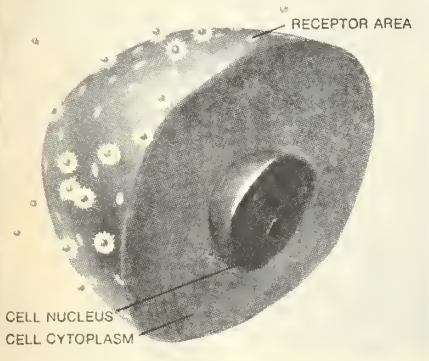
...may be particularly useful during outbreaks or epidemics and for high-risk patients in whom the occurrence of influenza A_2 is especially hazardous.

...a high degree of safety in clinical use.

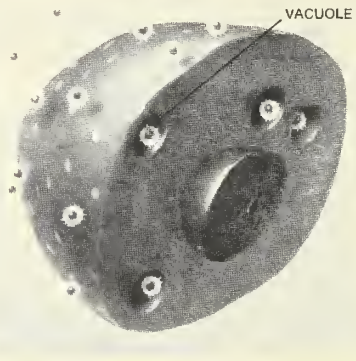
...simple once daily or b.i.d. dosage.

The mode of action of Symmetrel®

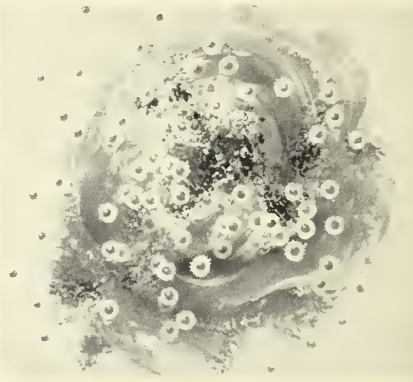
How the influenza virus invades and destroys the untreated cell



1 Viruses outside the cell attach themselves to specific cell receptor areas

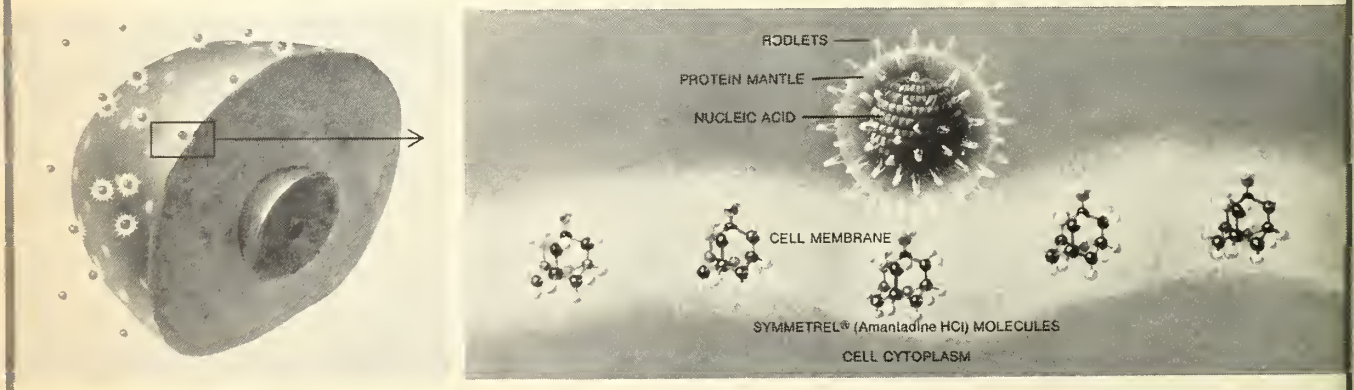


2 The virus is incorporated into a vacuole within the cell. From this vacuole the virus nucleic acid passes into the cell cytoplasm



3 The virus nucleic acid then directs the cell to produce both new virus nucleic acid and virus protein coat material which aggregate to form new virus particles. This process leads to the release of new virus particles and eventual destruction of the cell

How Symmetrel® (Amantadine HCl) prevents virus invasion[1]



Our current knowledge leads us to believe "Symmetrel" acts as a molecular barrier to influenza virus penetration. Shown here in a greatly enlarged section, "Symmetrel"—located at the cellular membrane—effectively prevents (blocks) virus penetration. Thus, "Symmetrel" does not directly destroy the virus particle but acting as a virostat prevents the cycle of virus penetration, virus replication, and cell destruction that is characteristic of virus invasion of animal cells (tissue). *Artist's conception based on current scientific knowledge.*

1. "Mode of Action of the Antiviral Activity of Amantadine in Tissue Culture", Hoffmann, C. E.; Neumayer, E. M.; Haff, R. F.; and Goldsby, R. A., Journal of Bacteriology *90*,623 (1965).

Safety of Symmetrel® Confirmed. When used as indicated, is generally well tolerated. No kidney, liver, bone marrow, or hematological disturbances have been observed.

Prescribing Information

Indications: "Symmetrel" is indicated for the prevention (prophylaxis) of influenza A_2 in persons of all age groups. Early use is recommended, preferably before or as soon as possible after actual or suspected contact with individuals suffering from influenza A_2. "Symmetrel" should especially be considered for high influenza-risk patient groups such as those suffering from chronic debilitating diseases and elderly persons.

Contraindications: Not indicated for the prevention of influenzal or respiratory illness other than influenza A_2 or for the treatment of established disease.

Warnings: Administration to patients with central nervous system disease, particularly geriatric patients with cerebral arteriosclerosis, and patients with a history of epilepsy or other "seizures," requires strict observation for possible untoward effects (see Adverse Reactions). Patients taking psychopharmacologic drugs, central nervous system stimulants, or alcoholic beverages should be observed for possible evidence of intolerance. Those patients who experience central nervous system effects or blurring of vision should be cautioned against driving or working in situations where alertness is important.

No teratogenic effects have been seen in reproductive studies in rats and rabbits. Studies in pregnant women have, however, not been done and use of this drug in women of childbearing age should be undertaken only after weighing the possible risks to the fetus against benefit to the pregnant patient. It should not be administered to nursing mothers since it is not known whether the drug is secreted in the milk.

Precautions: Ineffective against bacterial infections. Patients should be observed for idiosyncratic reactions as with all new drugs. Geriatric patients with pre-existing serious medical illnesses with mental or physical deterioration should be followed carefully medically while taking "Symmetrel." (See Adverse Reactions.)

Adverse Reactions: With higher than indicated doses manifestations of central nervous system effects such as nervousness, insomnia, dizziness, lightheadedness, drunken feeling, slurred speech, ataxia, inability to concentrate and some psychic reactions including depression and feelings of detachment were seen. Occasional blurred vision was reported at higher doses. Some of the milder and less pronounced symptoms above have been reported in a small number of patients taking the recommended dosage of 200 mg per day. Those were mostly transient and disappeared with continued administration of the drug. Some geriatric patients developed paranoid or hallucinatory behavior and became unmanageable while taking 200 mg daily. Medically unselected seriously deteriorated geriatric patients showed poor clinical tolerance after several weeks of daily dosing with 200 mg per day. One elderly patient with a history of prior cerebrovascular accident developed visual hallucinations and grand-mal convulsions while on drug at 800 mg per day. Some cases of dry mouth, gastrointestinal upset and skin rash and rarely, tremors, anorexia, pollakiuria, and nocturia have been also reported.

Safety: When used as indicated, is generally well tolerated. No kidney, liver, bone marrow, or hematological disturbances have been observed.

Dosage: *Adults:* Two 100 mg capsules (or 4 teaspoonfuls of syrup) as a single daily dose or the daily dose may be divided into one capsule of 100 mg (or 2 teaspoonfuls of syrup) twice a day.

Children: 1 yr.—9 yrs. of age: Calculate total daily dose on the basis of 2 mg to 4 mg per pound of body weight per day (but not to exceed 150 mg per day). Daily dose, given as the syrup, should be given in 2 or 3 equal portions.

9 yrs.—12 yrs. of age: Total daily dose 200 mg given as one capsule of 100 mg (or 2 teaspoonfuls of syrup) twice a day.

How Supplied: *Capsules:* Bottles of 100. Each red, gelatin capsule contains 100 mg amantadine HCl.
Syrup: Bottles of 1 pint. Each 5 ml (1 teaspoonful) contains 50 mg amantadine HCl.

DUPONT

Symmetrel®

(Amantadine HCl)

A molecular barrier to virus penetration

arrest diarrhea

in • gastroenteritis • acute infections



LOMOTIL®

Each tablet and each 5 cc. of liquid contains:
diphenoxylate hydrochloride 2.5 mg.
(Warning: May be habit forming)
atropine sulfate 0.025 mg.

Effectiveness: Lomotil possesses a unique degree of effectiveness in both acute and chronic diarrhea.

Convenience: Lomotil is supplied as small, easily carried, easily swallowed tablets and as a pleasant, fruit-flavored liquid.

Versatility: The therapeutic efficiency, safety and convenience of Lomotil may be used to advantage alone or as adjunctive therapy in diarrhea associated with:

- **Ulcerative colitis**
- **Acute infections**
- **Irritable bowel**
- **Regional enteritis**
- **Drug therapy**
- **Food Poisoning**
- **Functional hypermotility**
- **Malabsorption syndrome**
- **Ileostomy**
- **Gastroenteritis and colitis**

Dosage: For correct therapeutic effect—Rx correct therapeutic dosage. The recommended initial daily dosages, given in divided doses, until diarrhea is controlled, are:

Children: Age	Total Daily Lomotil Dosage	Lomotil Liquid Dosage (Each teaspoonful [4 cc.] contains 2 mg. of diphenoxylate HCl)
3-6 months	3 mg.	½ tsp. 3 times daily
6-12 months	4 mg.	½ tsp. 4 times daily
1-2 years	5 mg.	½ tsp. 5 times daily
2-5 years	6 mg.	1 tsp. 3 times daily
5-8 years	8 mg.	1 tsp. 4 times daily
8-12 years	10 mg.	1 tsp. 5 times daily

Adults: 20 mg. (2 tsp. 5 times daily or 2 tablets 4 times daily) Based on 4 cc. per teaspoonful. Maintenance dosage may be as low as one-fourth the initial daily dose.

Precautions: Lomotil, brand of diphenoxylate hydrochloride with atropine sulfate, is a Federally exempt narcotic preparation of very low addictive potential. Recommended dosages should not be exceeded. Lomotil should be kept out of reach of children since accidental overdosage may cause severe respiratory depression. Lomotil should be used with caution in patients with impaired liver function and in patients taking addicting drugs or barbiturates. The subtherapeutic amount of atropine is added to discourage deliberate overdosage.

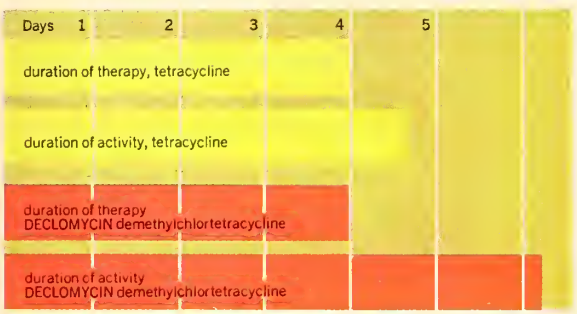
Side Effects: Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness, insomnia, numbness of extremities, headache, blurring of vision, swelling of the gums, euphoria, depression and general malaise.

why wonder about a drug

when you know

DECLOMYCIN®
DEMETHYLCHLORTETRACYCLINE

produces 1-2 "extra" days' activity



1-2 "extra" days' activity
after the last dose to protect against relapse

one 300 mg tablet b.i.d.
or
one 150 mg capsule q.i.d.

Effective in a wide range of everyday infections—respiratory, urinary tract and others—in the young and aged—the acutely or chronically ill—when the offending organisms are tetracycline-sensitive.

Contraindication—History of hypersensitivity to demethylchlortetracycline.

Warning—In renal impairment, usual doses may lead to excessive systemic accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort.

Precautions and Side Effects—Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. Use of demethylchlortetracycline during tooth development (last trimester of pregnancy, neonatal period and early childhood) may cause discoloration of the teeth (yellow-grey-brownish). This effect occurs mostly during long-term use but has also been observed in short treatment courses. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment. Side reactions include glossitis, stomatitis, proctitis, nausea, diarrhea, vaginitis and dermatitis. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy. Anaphylactoid reactions have been reported.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products.

Capsules: 150 mg; *Tablets:* film coated, 300 mg, 150 mg, and 75 mg of demethylchlortetracycline HCl.

LEDERLE LABORATORIES, A Division of American Cyanamid Company, Pearl River, New York
419-6—4075

Lederle



For he's a jolly good fellow



But what does he think?



Many overweight patients can benefit from the appetite control provided by the sustained anorexigenic-tranquilizing action of BAMADEX SEQUELS: anorexigenic action of amphetamine; tranquilizing action of meprobamate; prolonged action through sustained release of active ingredients.

Bamadex® Sequels®

DEXTRO-AMPHETAMINE SULFATE (15 mg.) SUSTAINED RELEASE CAPSULES
WITH MEPROBAMATE (300 mg.)

to help establish a new dietary pattern

Contraindications: Dextro-amphetamine sulfate: in hyperexcitability and in agitated prepsychotic states. Previous allergic or idiosyncratic reactions to meprobamate.

Precautions: Use with caution in patients hypersensitive to sympathamimetic compounds, who have coronary or cardiovascular disease, or are severely hypertensive.

Dextro-amphetamine sulfate: Excessive use by unstable individuals may result in psychological dependence.

Meprobamate: Careful supervision of dose and amounts prescribed is advised, especially for patients with known propensity for taking excessive quantities of drugs. Excessive and prolonged use in susceptible persons, e.g. alcoholics, former addicts, and other severe psychaneuratics, has been reported to result in dependence on the drug. Where excessive dosage has continued for weeks or months, reduce dosage gradually. Sudden withdrawal may precipitate recurrence of preexisting symptams such as anxiety, anorexia, or insomnia; or withdrawal reactions such as vomiting, ataxia, tremors, muscle twitching and, rarely, epileptiform seizures. Should meprobamate cause drowsiness or visual disturbances, reduce dosage and avoid operation of motor vehicles, machinery or other activity requiring alertness. Effects of excessive alcohol consumption may be increased by meprobamate. Appropriote caution is recommended with patients prone to excessive drinking. In patients prane to both petit and grand mal epilepsy meprabamate may precipitate grand mal attacks. Prescribe cautiously and in small quantities to patients with suicidal tendencies.

Side Effects: Overstimulation of the central nervous system, jitteriness and insomnia or drowsiness.

Dextro-amphetamine sulfate: Insomnia, excitability, and increased matar activity are common and ordinarily mild side effects. Confusion, anxiety, aggressiveness, increased libido, and hallucinations have alsa been observed, especially in mentally ill patients. Rebaund fatigue and depression may follow central stimulation. Other effects may include dry mouth, anorexia, nausea, vomiting, diarrhea, and increased cardiovascular reactivity.

Meprobamate: Drowsiness may occur and can be assaciated with ataxia; the symptom can usually be controlled by decreasing the dase, or by cancomitant administration of central stimulants. Allergic or idiosyncratic reactions: maculapapular rash, acute nonthrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever, transient leukopenia. A case of fatal bullous dermatitis, following administration of meprobomate and prednisolone, has been reparted. Hypersensitivity has produced fever, fainting spells, angioneuratic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, stomatitis, proctitis (1 case), anaphylaxis, agranulocytosis and thrambacytopenic purpura, and a fatal instance of aplastic anemia, but only when other drugs known to elicit these conditians were given cancomitantly. Fast EEG activity, usually after excessive dosage. Impairment of visual accommadation. Massive overdasage may produce drawsiness lethargy, stupor, ataxia, coma, shock, vasomotar and respiratory collapse.

Lederle

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695-6

AMA Meeting, Las Vegas

The House of Delegates of the American Medical Association meeting in Las Vegas, November 27-30, 1966, took action on a variety of subjects, including the following:

Education for Family Practice

Calling it "a document of major importance on a subject of vital significance to the health care of the American public," the House endorsed the recommendations of the Ad Hoc Committee on Education for Family Practice and authorized the Council on Medical Education to develop and initiate plans for their implementation. The long report contained the following recommendations:

"A. Major efforts should be instituted promptly to encourage the development of new programs for the education of large numbers of family physicians for the future, as described in the body of this report. The educational programs should relate to all levels of medical education, including pre-medical preparation, medical school education, internship and residency training, and continuing medical education. Keynotes should be excellence comparable to programs in other specialties and flexibility to permit the design of programs which will meet the needs and interests of individual physicians.

"B. Medical schools and teaching hospitals should be urged to explore the possibility of developing models of family practice, in cooperation with the practicing profession.

"C. New sources of financial assistance should be developed for the support of family practice teaching programs. Substantial funds should be made available for all aspects of the programs, including the conduct of the educational program, the recruitment and training of full-time faculty, the development of facilities and models of family practice, and the conduct of research in patient care and community medicine.

"D. Recognition and status equivalent to other medical specialties should be given to family practice. An appropriate system of specialty certification should be provided for those who have completed approved educational programs and have demonstrated their competence as family physicians. The graduate program (i.e., internship-residency program) should be an integrated whole, evaluated for accreditation by one body rather than two.

"E. Careful attention should be given to other factors which should make the environment for family practice more favorable and serve as incentives to medical students and young physicians to enter this field.

"F. Careful study should be made of the effect of premedical programs and the admission procedures, curricula and student evaluation policies of medical schools upon the production of family physicians."

Public Law 89-97

The House adopted a resolution urging that the AMA advise the Department of Health, Education, and Welfare that the present requirements for certification and recertification have proven highly objectionable, unnecessary, and do not contribute to the quality of medical care.

It is also recommended that the American Medical Association endeavor to bring about repeal of those portions of PL 89-97 in which the requirement for physician certification of medical necessity appears.

The resolution concluded by suggesting that the fiscal intermediaries and the American Hospital Association be advised that AMA will be available to assist in the development of appropriate amendments to this legislation. The purpose of this consultation would be to discuss the complexities of the present requirement and to invite participation in the development of amendments to the law which will be professionally acceptable and administratively workable.

The House also adopted a resolution declaring that the AMA strongly support amendment of the Social Security Act, including Title XIX, to permit payments without assignments for medical care of the patient.

Prescribing of Drugs

The House adopted a report by the Board of Trustees reaffirming the position of the AMA regarding the prescribing of drugs. The report states:

"The present policy of the American Medical Association is that physicians should be free to prescribe drugs generically or by brand name for *all* of their patients, whether they are paying, Medicare, or indigent patients – the primary consideration being the best interests of the patient. Medical considerations must be paramount in the selection of drugs. In addition, the physician also has an obligation to be mindful of the economic consequences of the treatment he prescribes."

Choice of a Laboratory

The House adopted a report of the Judicial Council which answered questions which have been raised about laboratory services. The report stated:

"Medical considerations, not cost, must be paramount when the physician chooses a laboratory. The physician who disregards quality as the primary criterion or who chooses a laboratory because it provides him with low cost laboratory services on which he charges the patient a profit, is derelict in not acting in the best interests of his patient. However, if reliable quality laboratory services are available at lower cost, the *patient* should have the benefit of the savings."

Payments for Professional Services

To clarify AMA policies as they now exist, the House

adopted the following eight-point statement regarding payment for professional medical services:

"1. It is proper for the physician to establish the fee which he charges to any patient for the professional service rendered, with recognition of the fact that a duly constituted committee of his peers may appropriately review and pass upon the equity and justice of his charge.

"2. It is proper for third party agencies to make payment of professional medical fees in behalf of patients, with recognition of the fact that the service of the physician has been to the patient and the liability for payment rests primarily with the patient or his family.

"3. It is proper for a physician to work cooperatively with other physicians in a team approach to the provision of medical service, with recognition of the fact that each cooperating physician is entitled to compensation according to the value of his services, and that the charges attributable to each physician's service shall be made clearly known to the patient.

"4. It is proper for a physician who provides personal supervision and direction for a physician-in-training to charge for the professional medical service rendered.

"5. A physician should not enter into a contract or agreement with a hospital whereby the hospital acts as the agent for a physician unless it is with the consent of the physician and of the medical staff. The physician and the medical staff, as principals, should not approve any contract whose terms or conditions are inconsistent with the Principles of Medical Ethics and established policy of the American Medical Association.

"6. Physicians, collectively in hospitals, may properly establish special medical staff funds, wholly under their own control, which they may support as they see fit and disburse as they may agree.

"7. Fees for professional medical services are properly paid only to the responsible physicians and may not be appropriated by any other person or agency.

"8. The physician is the sole arbiter as to the ways in which he may dispose of his professional income, without duress, consistent with the laws of the land and the Principles of Medical Ethics of this Association."

Compensation for House Officers

The House approved the first four sections of a joint report by the Council on Medical Education and Council on Medical Service. Those sections provided new guidelines on the utilization of private patients in teaching programs; recommended principles to govern the assignment of professional responsibility of house officers for the care of paying patients; presented interpretations of the 1961 statements by the House concerning remuneration of house officers and the increasing responsibility of the medical profession for the development of appropriate methods of financial support for interns and residents, and recommended a statement to guide medical staffs in the development of additional funds to supplement, if necessary, those from hospital sources.

The House then modified or added the final four sections as follows:

E. The presently published provisions for payment under Part A, Title 18, Public Law 89-97 for services rendered to beneficiaries by interns and residents, and under Part B, Title 18, Public Law 89-97 for services rendered by attending physicians supervising interns and residents are compatible with the organization and administration of programs of graduate medical education according to the standards of the American Medical Association. The principles embodied in these provisions should uniformly apply to regulations governing all other third party medical care plans.

F. It is recommended that sources and amount of compensation for house officers should be determined by local agreement and implemented in accordance with state laws and the ethical principles and policy positions of the American Medical Association.

G. The above principles should be widely publicized so that they may be understood and implemented in good faith by all concerned.

H. The broad and complex nature of the problems in the financial area is recognized, and continued studies and reports thereon by the Council on Medical Service are encouraged. These should include staff compensation, methods of fund collection, control and disposition, and other pertinent and related matters.

"In matters strictly of a policy nature, a physician who disagrees with the position of the American Medical Association is entitled to freedom and protection in his point of view."

The Journal of the Maine Medical Association

DANIEL F. HANLEY, M.D., Brunswick, Editor

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Across The Desk

Generic Name?

In briefest summary, the position of the Pharmaceutical Manufacturers Association with regard to the responsible identification of product and manufacturer in drug therapy, is as follows:

- Pharmaceutical products, even those with the same principal therapeutic ingredients, differ from manufacturer to manufacturer in terms of quality and formulation, either of which may influence proper therapy.

- Existing standards, controls and enforcement measures contribute importantly to the protection of the public, but they would be inadequate to assure reliability without the incentives and dedication of responsible pharmaceutical companies. Moreover, generic identity of principal drug ingredients is a futile goal, for it does not guarantee uniform therapeutic effect of finished products in all patients.

- The quality-minded producer who identifies his products and promotes them under unique names or under his company name has an interest in furthering his reputation and his services to a point that goes far beyond any norms that could reasonably be established and enforced as a general system of governmental regulations, even under complete domination of the industry.

- The overall reputation and performance of a company serve as reliable indexes to the quality of its products.

- No measures should be instituted that might abridge the physician's prerogative and responsibility to determine the proper therapy and prescribe the type and quality of medication which in his opinion will best serve the needs of his patients.

DEAN H. FISHER, M.D.
COMMISSIONER

State Of Maine
Department of Health and Welfare

Rubella Serology—The HAI Test

CHARLES H. OKEY, Ph.D.*

Serological tests for rubella are now available to medical practitioners in the state. A quick and accurate test was developed recently in a National Institute of Health laboratory and passed along to the Communicable Disease Center, U.S.P.H.S., for distribution to state health department laboratories. Training in the technics of the test and appropriate reagents were provided to these laboratories, including the Public Health Laboratory in Augusta.

Isolations of the rubella virus in cells of African green monkey kidney tissue cultures in 1961 opened up the possibilities of diagnostic tests for immunity and of the development of a vaccine. None of the tests devised subsequently were ideal. The new test, based on the clumping of chick erythrocytes by the virus, has the advantages of speed, simplicity, sensitivity and reliability. It is known as the HAI – hemagglutination inhibition – in which immune serum prevents the erythrocyte clumping. The inhibition of agglutination by rubella antibody carries the probable connotation of immunity. The use of the test would be appropriate in several situations.

Infants with congenital malformations compatible with the rubella syndrome should show high titers of antibody for the rubella virus if the malformations have been caused by this virus as a result of maternal infection during the first trimester of gestation. However, as many as 75% of women infected with rubella during this period will not deliver a defective infant but will transfer antibody to the fetus. Demonstration of maternal antibody in the child may lead to the false conclusion of rubella syndrome in the child. A second test a few weeks later, showing a sharp drop in titer, will enable the clinician to avoid this error.

Exposure of the pregnant woman to rubella raises the question often of her immune status to this disease. Memory may be defective; judgment may be complicated by a childhood febrile episode accompanied by an exanthem which might have been due to rubella or to some other virus. A number of the enteric viruses have the potential of causing a rash resembling that of rubella. Antibodies for rubella can be demonstrated with the HAI test indicating a previous exposure but it is not possible at this point to state unequivocally whether this denotes immunity. As experience relating antibody titer to immunity is accumulated, it should be feasible to set a particular titer as being compatible with protection against infection. The absence of rubella antibody indicates clearly the susceptibility of the individual. In the situation of pregnant women exposed to German measles, it might be well to point out that, although the use of gamma globulin serves to suppress the clinical manifestations of rubella, there is no evidence to show that it will or will not prevent infection and viremia that may lead to the possible development of malformations among children of these exposed women. A few instances have been reported in which congenital malformations of the type associated with rubella infections were observed in infants born of asymptomatic mothers who had received globulin for rubella prophylaxis. Gamma globulin is not recommended for women having household contact with rubella because the exposure has already taken place; infection may already have as much as a seven day duration, the virus having been shed for the seven days prior to onset of rash in the initial case. However, the use of gamma globulin is justified in pregnant women with no known history of rubella and a casual contact with a rubella case.

An attack of a febrile exanthem can be identified as rubella by testing acute and convalescent serum specimens for rubella antibody. A rise in titer in the second specimen provides laboratory confirmation of the clinical diagnosis. A static titer indicates the exanthem was caused by some other agent. The HAI also may be used to investigate presumptive complications of rubella, such as encephalitis, arthritis, etc.

To recapitulate, the HIA test may be ordered, using the Public Health Laboratory agglutination kit, by marking the report form for rubella serology in the following situations: Single specimen from pregnant women obtained within no more than one week after

*Director, Public Health Laboratory, Augusta, Maine 04330.

exposure to determine their immune status; two specimens, the first taken within the first three days of rash and another seven to ten days later, for the purpose of confirming rubella infection in the pregnant woman; acute and convalescent serum specimens to aid in investigating rubella complications.

Rubella was not considered as an important clinical illness until Gregg and Swan were able to relate congenital malformations to maternal rubella in 1941. The early work by these investigators showed that the principal malformations were cataracts, deafness and heart defects. Since then it has been recognized that rubella in the first trimester increases the incidence of abortion and stillbirth to a great degree. Rubella has become the best recognized and commonest environmental agent known at the present time to cause congenital malformations. As pointed out above, success in growing the virus in tissue culture has led to the production of at least two vaccines and to the development of several serologic diagnostic procedures, the latest and best of which is the HAI test.

The vaccines produced to date have been the viable attenuated type, producing an excellent immune response as shown by purposeful exposure of vaccinated children to rubella cases. The first of the vaccines had the distinct disadvantage of virus dissemination by the vaccine recipients so that the disease spread to their contacts. Another vaccine, made by additional tissue culture passages of the virus, did not spread to susceptible contacts although some virus could be demonstrated in the nasopharyngeal secretions of those receiving the vaccine. Currently, a vaccine of increased attenuation is being tested in this country and in Australia. The HAI test will be used to measure the antibody response.

Yet to be resolved is the problem of selecting the age level at which a vaccine might be used to its best advantage. The duration of protection engendered by the vaccine is unknown presently. Some authorities have suggested the natural disease should be allowed to occur in the under ten-year-old group, in which 30% of the cases occur, because this is regarded as conferring permanent immunity. They further suggest the vaccine should be used as a supplementary means of producing immunity in high school students and in women of child-bearing age. A novel approach, stated recently, calls for the HAI test to be applied to the same specimen submitted for the premarital blood test for syphilis. Negative results for rubella would indicate the desirability of administering the vaccine. This must be approached with some caution, however, because of the significant percentage of pregnancies at this time and the uncertain teratogenic properties of the vaccine. Furthermore, the protective influence of the vaccine against fetal damage is unknown. Despite these reservations, much of the basic information needed to control, or even to eradicate rubella, is available. Research is in progress now to secure the additional facts that are needed for control. We may anticipate the time when control is effected and the experience of 3,000 babies, born during the epidemic year of 1964 with congenital malformations associated with maternal rubella, will not be repeated.

ANNUAL MEETING DATES FOR YOUR 1967 CALENDAR

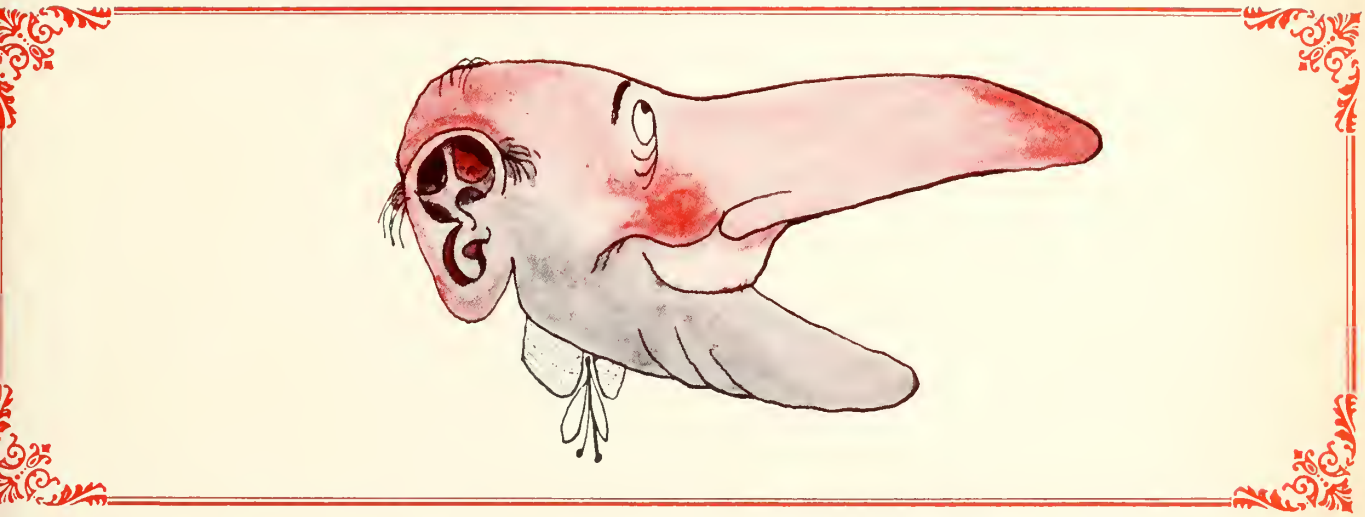
Maine Medical Association, June 11-13, 1967 at The Samoset, Rockland, Maine

American Medical Association, June 18-22, 1967, Atlantic City, New Jersey

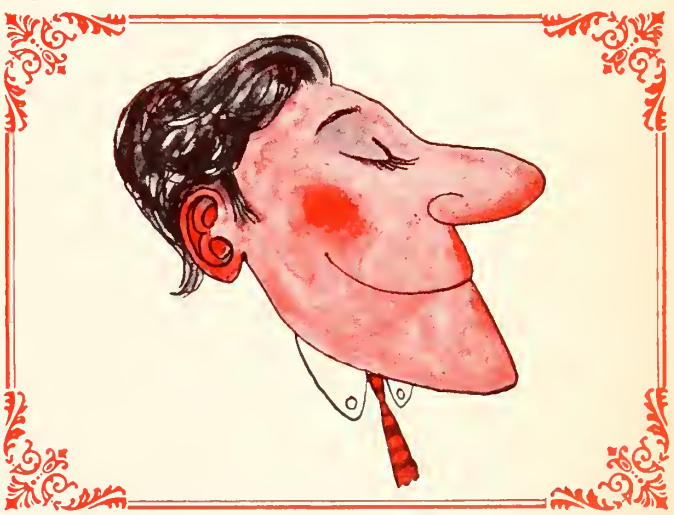
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Otrivin®

(xylometazoline CIBA)
on Rx only





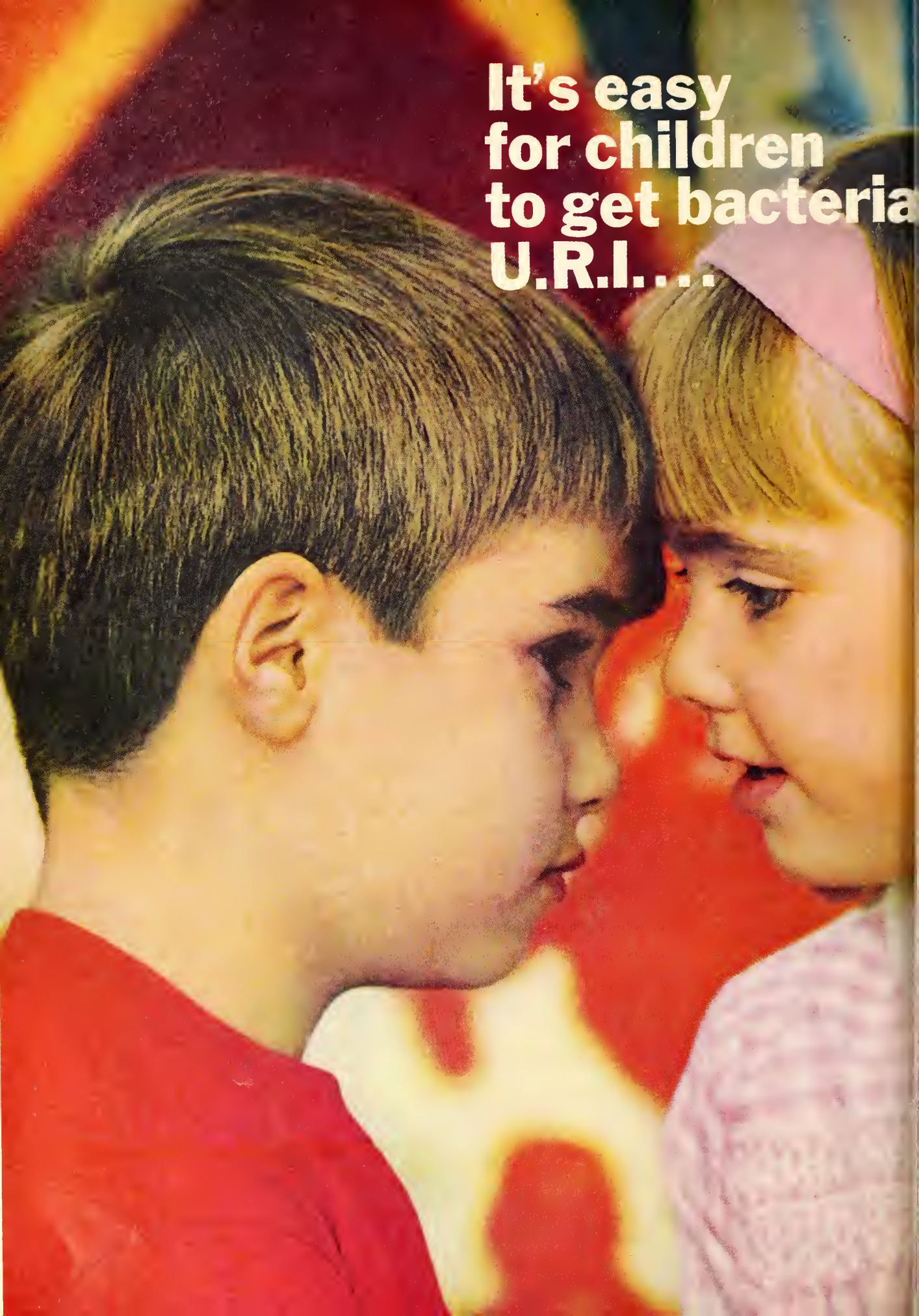


■ quickly relieves congested nose
■ action is gentle, yet prolonged
■ side effects are minimal

INDICATION: Nasal congestion. CONTRAINDICATION: Do not use in patients sensitive to small doses of sympathomimetic substances. WARNINGS: Prolonged or excessive use may cause rebound congestion. Use cautiously in patients with hyperthyroidism, coronary artery disease, hypertension, and diabetes. CAUTION: Do not shake Nasal Spray. Rinse Nasal Solution dropper or Nasal Spray tip in hot water after each use. No more than one person should use the same dropper bottle or nasal spray.
SIDE EFFECTS: Occasional local reactions: rebound congestion, slight burning or stinging, sneezing, dry nose. Occasional systemic effects: headache, drowsiness, lightheadedness, insomnia, palpitations. Overdosage in young children may produce profound sedation. DOSAGE: **Adults:** *Nasal Solution*—2 or 3 drops in each nostril every 4 to 6 hours. *Nasal Spray*—Squeeze rapidly once or twice in each nostril every 4 to 6 hours. **Children under 12:** *Pediatric Nasal Solution*—2 or 3 drops in each nostril every 4 to 6 hours. One drop should be used in infants under 6 months. *Pediatric Nasal Spray*—Squeeze rapidly once in each nostril holding tube upright; repeat every 4 hours as necessary. SUPPLIED: OTRIVIN® hydrochloride (xylometazoline hydrochloride CIBA) *Nasal Solution*, 0.1%; dropper bottles of 1 fluidounce, bottles of 1 pint. *Nasal Spray*, 0.1%; plastic squeeze tubes of 15 ml. *Pediatric Nasal Solution*, 0.05%; dropper bottles of 1 fluidounce. *Pediatric Nasal Spray*, 0.05%; plastic squeeze tubes of 15 ml. *Nasal Solutions* contain either 0.1% or 0.05% xylometazoline hydrochloride, triethanolamine, hydrochloric acid, sodium chloride, and phenylmercuric acetate 1:50,000 as preservative in water. *Nasal Sprays* contain either 0.1% or 0.05% xylometazoline hydrochloride, potassium phosphate monobasic, potassium chloride, sodium phosphate dibasic, sodium chloride, and benzalkonium chloride 1:5000 as preservative in water. *Consult complete literature before prescribing.*
CIBA Pharmaceutical Company, Summit, N. J.

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proven effectiveness in common bacterial upper respiratory infections

Clinical results in patients probably much like those you see every day show that an overwhelming majority responded favorably to Gantanol (sulfamethoxazole) Suspension.[1-12] These patients, numbering over 1600 in published reports, had a variety of bacterial upper respiratory infections such as otitis media, sinusitis, pharyngitis and tonsillitis, including over 700 cases caused by beta-hemolytic streptococci.[1-7]

Although in bacteriologically proven streptococcal infections penicillin remains the drug of choice, Gantanol (sulfamethoxazole) has shown conversion rates comparable to those generally seen with penicillin and apparently superior to those cited in the literature for erythromycin and broad-spectrum antibiotics.[1,2] Conversion rates have ranged from a high of 96 per cent in 229 patients[2] to a low of 65 per cent in 105 cases.[3,4] When Gantanol (sulfamethoxazole) Suspension is used in group A beta-hemolytic streptococcal infections, it is important to continue therapy in the recommended dosage for at least 10 days. In addition, Gantanol (sulfamethoxazole) Suspension has demonstrated antibacterial activity against *D. pneumoniae, H. influenzae* and *Staph. aureus.* Thus Gantanol (sulfamethoxazole) Suspension may be considered a practical choice for common bacterial U.R.I., as well as an effective alternative in the penicillin-sensitive patient with proven beta-hemolytic streptococcal infection.



therapy generally uncomplicated by side effects

Such favorable results as those cited in the literature[1-12] are even more meaningful in view of the fact that only 27 of 1961 patients (1.4%) discontinued therapy because of side effects. Of the total side effects reported in 107 patients (5.5%), most were mild and included rash, urticaria, itching, dizziness, headache, diarrhea, nausea and vomiting, shivering sensation, skin discoloration and crystalluria.[1-12]

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Acute and chronic respiratory and urinary tract bacterial infections due to susceptible microorganisms. At present penicillin is considered the drug of choice in acute group A beta-hemolytic streptococcal infections; however, Gantanol (sulfamethoxazole) has shown an effectiveness approaching that of penicillin in a large number of patients. If employed in such infections, *it is important that therapy be continued in the usual recommended dosage for a period of at least 10 days.*

Contraindicated in sulfonamide-sensitive patients, pregnant females at term, premature infants or infants during first 3 months of life.

Warnings: Use only after critical appraisal in patients with liver damage, renal damage, urinary obstruction or blood dyscrasias. If toxic or hypersensitivity reactions or blood dyscrasias occur, discontinue therapy. In intermittent or prolonged therapy, blood counts and liver and kidney function tests should be performed. Data insufficient on prolonged or recurrent therapy in chronic renal diseases of children.

Precautions: Observe usual sulfonamide therapy precautions, including maintenance of an adequate fluid intake. Use with caution in patients with histories of allergies and/or asthma. Patients with impaired renal function should be followed closely since renal impairment may cause excessive drug accumulation. Occasional failures may occur due to resistant microorganisms. Not effective in virus or rickettsial infections.

Adverse Reactions: Following may occur: headache, nausea, vomiting, urticaria, diarrhea, hepatitis, pancreatitis, blood dyscrasias, neuropathy, drug fever, Stevens-Johnson syndrome, skin rash, injection of the conjunctiva and sclera, petechiae, purpura, hematuria and crystalluria.

Dosage: Children—1 teasp./20 lbs initially, followed by ½ teasp./20 lbs b.i.d. *Adults*—4 teasp. initially, followed by 2 teasp. b.i.d. or t.i.d., depending upon severity of infection.

How Supplied: Suspension 10%, 0.5 Gm sulfamethoxazole/5 cc teasp., cherry-flavored, bottles of 16 oz.

References: 1. Braden, B., and Colmore, J. P.: *J. Oklahoma M.A., 57*:7, 1964. 2. Alban, J.: *Am. J. Dis. Child., 109*:304, 1965. 3. Reichelderfer, T. E.: *Clin. Med., 71*:1045, 1964. 4. Jackson, H.; Cooper, J.; Mellinger, W. J., and Olsen, A. R.: *Southwestern Med., 44*:246, 1963. 5. Braden, B.; Colmore, J. P., and Cummings, M. M.: Antimicrobial Agents Annual—1960, p. 54. 6. Peters, J. H.: Data adapted from a Scientific Exhibit presented at the Spring Meeting of the American Academy of Pediatrics, April 26-29, 1965. 7. Peters, J. H.: Antimicrobial Agents and Chemotherapy—1961, p. 406. 8. Elia, J. C.: *Eye Ear Nose & Throat Month., 41*:722, 1962. 9. Patton, J. M.: *West. Med., 5*:46, 1964. 10. Chastain, P. J.: *J. Florida M.A., 48*:816, 1962. 11. Grater, W. C.: *Antibiotics & Chemother., 12*:450, 1962. 12. Exline, A. L.: *Colorado GP, 5*:(5),11, 1963.

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*Marks, V., and Dawson, A.: Brit. M. J. 1:293, 1965.



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County Society Notes

KENNEBEC

The Kennebec County Medical Association met at the Augusta State Hospital in Augusta, Maine on December 8, 1966.

The meeting was called to order by the President, Allan J. Stinchfield, M.D.

Brinton T. Darlington, M.D. read the slate of officers for 1967, as proposed by the nominating committee, which was approved:

President, Robert L. Ohler, M.D., Togus
Vice-President, Richard H. Dennis, M.D., Waterville
Secretary-Treasurer, Lucien F. Veilleux, M.D., Waterville
Delegates to the Maine Medical Association House of Delegates: Drs. John M. H. Barnard, Francis J. O'Connor and Allan J. Stinchfield, all of Augusta, Earle M. Davis, Paul A. Jones, Jr. and Valentine J. Moore, all of Waterville. Alternates: Drs. Francis A. Spellman, Togus, Richard E. Barron, Monmouth, Richard T. Chamberlin and Richard L. Chasse, both of Waterville, Theodore M. Russell and John H. Shaw, both of Augusta
Councilors, Drs. Joseph R. Crawford, Augusta, Vaughn R. Sturtevant, Waterville and George I. Gould, Richmond
Grievance Committee, Drs. Oakley A. Melendy, Augusta, Edmund N. Ervin, Waterville and Ivan E. McLaughlin, Gardiner
Manpower Procurement and Civil Defense Committee, Drs. Albert A. Poulin, Waterville, M. Tieche Shelton, Augusta and Clarence R. McLaughlin, Gardiner

Ames Robey, M.D. gave a prolonged discussion of the place of the physician in court.

A meeting of the Kennebec County Medical Association was held at the Holiday Inn in Augusta, Maine on January 19, 1967.

The meeting was called to order by the President, Robert L. Ohler, M.D. Dr. Ohler asked for program suggestions and requested that members of the Association express their views regarding objectives that the Association might pursue.

Robert M. Knowles, M.D. of Portland, Chairman of the Maine Medical Association's Maternal Mortality Committee, then discussed the problem of maternal mortality. He requested that physicians report all maternal deaths occurring within 90 days of the pregnancy. He sited bleeding, eclampsia and pulmonary embolus as common causes of death.

William E. Schumacher, M.D. urged that members of the Association personally participate in influencing members of the legislature regarding pertinent medical legislation.

LUCIEN F. VEILLEUX, M.D., *Secretary*

YORK

Twenty-four members attended the meeting of the York County Medical Society which was held at the York Hospital in York, Maine on January 11, 1967.

Following a social hour and dinner, the President, Walter R. Peterlein, Jr., M.D. called the meeting to order.

The nominating committee presented the following slate of officers for 1967 which was approved:

President, Eugene P. Wolfahrt, M.D., Saco
Vice-President, Oney P. Smith, M.D., Wells
Secretary-Treasurer, Charles W. Kinghorn, M.D., Kittery
Executive Committee, Drs. Carl E. Richards, Sanford, Walter R. Peterlein, Jr., Springvale, Eugene P. Wolfahrt, Oney P. Smith and Charles W. Kinghorn

CHARLES W. KINGHORN, M.D., *Secretary*



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warning: may be habit forming
Pectin (2½ grains) 162 mg.
Kaolin (specially purified) (85 grains) 5.5 Gm.
(alcohol 0.69%)
Usual Adult Dose: One or two tablespoonfuls three times daily.

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CUMBERLAND

A meeting of the Cumberland County Medical Society was held at Valle's Steak House in Portland, Maine on December 15, 1966 with eighty-two members and guests attending.

Following a social hour and dinner, the President, Alvin A. Morrison, M.D. introduced Mr. L. Morrill Burke who spoke briefly concerning the proposed changes in future planning of institutions of higher education in the State of Maine. He particularly stressed the suggested move of the University of Maine in Portland to Gorham, emphasizing his personal feeling that such a move would be disadvantageous to the whole community rather than a beneficial and progressive step forward.

Dr. Morrison announced that progress has been made on updating the Bylaws of the Society and that he hoped the new President would carry through with the revision. A letter from the Portland school system was read which asked for the continued cooperation of the Society in the educational projects sponsored by the Federal Government. Benjamin Zolov, M.D. asked for a future report on Project Safety.

George I. Geer, Jr., M.D. reported on the year's activities of the Public Relations Committee and Robert E. McAfee, M.D., in his report of the activities of the Health Careers Committee, pointed out the relatively poor standing of the State of Maine in the numbers of students entering medical and paramedical fields. After a brief discussion of Medicare problems by Stephen E. Monaghan, M.D., the Society voted that a special committee be formed to look into the feasibility of having a Maine financial institution collect, coordinate, and distribute Medicare funds, similar to the program being carried out in Massachusetts.

Resolutions on the death of Donald H. Daniels, M.D. were read by Dr. Morrison and the Secretary was instructed to spread the report upon the records of the Society and to send a copy to Mrs. Daniels.

Dr. Morrison reviewed the activities of the Society during his tenure as President. The nominating committee then presented the following slate of officers for 1967 which was approved:

President, Charles W. Capron, M.D., Portland
Vice-President, Lloyd G. Davies, M.D., Fryeburg
Secretary-Treasurer, Stanley B. Sylvester, M.D., Portland
Delegates to the Maine Medical Association House of Delegates: Drs. Lloyd G. Davies, Fryeburg, Louis N. Taxiarchis, Alvin A. Morrison, Frederick B. Clark, Charles W. Capron, Robert W. Agan, Martin A. Barron, Jr., Stanley G. Dienst and Bernard Givertz, all of Portland. Alternates: Drs. Sidney R. Branson, South Windham, Kirk K. Barnes, Brunswick, Edmund W. Hardy, Falmouth, John F. Gibbons, Robinson L. Bidwell, Robert E. McAfee, William L. MacVane, Jr., Edward C. Matthews, Douglass C. Pennoyer and Alphonse Telfeian, all of Portland

Charles W. Capron, M.D., the incoming President, closed the meeting following a resounding vote of thanks to Dr. Morrison for his dedicated services during his Presidency.

STANLEY B. SYLVESTER, M.D., *Secretary*

LINCOLN-SAGADAHOC

The Lincoln-Sagadahoc County Medical Society met at The Ledges in Wiscasset, Maine on December 20, 1966.

The meeting was called to order by the President, Alan W. Zeller, M.D.

Francis A. Winchenbach, M.D. explained some of the procedures to be followed in submitting Companion Plan reports to the Physicians' Service Division of the Associated Hospital Service of Maine.

Carl R. Griffin, Jr., M.D. introduced John E. Knowles, M.D. of Portland who spoke on correctible hearing loss problems.

GEORGE W. BOSTWICK, M.D., *Secretary*

A meeting of the Lincoln-Sagadahoc County Medical Society was held at The Ledges in Wiscasset, Maine on January 17, 1967. The meeting was called to order at 8:30 p.m.

The following officers were elected for 1967:
President, Charles E. Burden, M.D., Bath
Vice-President, Mary J. Tracy, M.D., Damariscotta
Secretary-Treasurer, George W. Bostwick, M.D., Newcastle
Delegates to the Maine Medical Association House of Delegates: Drs. John F. Andrews, Boothbay Harbor and Ralph C. Powell, Damariscotta. Alternates: Drs. Nelson P. Blackburn and Paul A. Fichtner, both of Bath
Censors, Drs. Samuel L. Belknap, Damariscotta, John F. Dougherty, Bath and Carl R. Griffin, Jr., Boothbay Harbor
Program Committee, Drs. Ralph C. Powell, Damariscotta, Arkadij Oceretko, Bath and John F. Dougherty

John F. Dougherty, M.D. spoke briefly on Title XIX.

ALAN W. ZELLER, M.D., *Secretary pro tem*

HANCOCK

The Hancock County Medical Society held its annual business meeting on December 14, 1966 at the Hancock House in Ellsworth, Maine.

The following officers were elected for 1967:
President, Robert D. Wilson, M.D., Bar Harbor
Vice-President, John D. McIntyre, M.D., Ellsworth
Secretary-Treasurer, Russell G. Williamson, M.D., Blue Hill
Delegates to the Maine Medical Association House of Delegates: Drs. Bradley E. Brownlow, Blue Hill and Herbert T. Wilbur, Jr., Southwest Harbor. Alternate: Elizabeth E. Williamson, M.D., Blue Hill
Censor, Robert F. Russell, M.D., Penobscot (3 yrs.)

A lively discussion of existing differences in philosophy of medical practice in the county ensued.

RUSSELL G. WILLIAMSON, M.D., *Secretary*

New Members

AROOSTOOK

Louis E. Jorel, M.D., 12 Thomas Ave., Caribou 04736

CUMBERLAND

Geoffrey A. Stroud, M.D., 65 Baribeau Dr., Brunswick 04011

HANCOCK

George G. Fuller, M.D., 50 Union St., Ellsworth 04605

Letters to the Editor

To the Editor:

This is to advise you of a change in the procedure of the voluntary admission procedures at Pineland Hospital and Training Center.

Effective January 18, 1967, parents, or guardians, seeking voluntary admission for an applicant will be required to accompany the prospective patient to this institution for a preadmission interview and evaluation. This practice, which should simplify and expedite services to the community, will take approximately four hours and will include a physical and psychological examination of the applicant, as well as a social work interview with the parents or guardian.

Continued on Page XV


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Following the completion of the examination, recommendations concerning admission will be made to the Superintendent and the parents, or guardians, will be notified of his decision approximately two weeks subsequent to the initial appointment.

PETER W. BOWMAN, M.D., Superintendent
Pineland Hospital and Training Center
Pownal, Maine 04069

To the Editor:

Reference is made to General Information Letter No. 2 dated 24 January 1967. Paragraph 4, "Health Insurance by Law or Employment" should be amended to read as follows:

"Section 1086(d) of the law provides that in the case of retired personnel and their dependents, and dependents of deceased personnel that 'No benefits shall be payable under any plan covered by this section in the case of a person enrolled in any other insurance, medical service, or health plan provided by law or through employment unless that person certifies that the particular benefit he is claiming is not payable under the other plan.'"

Contracting Officer
Office for the Civilian Health and Medical Program of the Uniformed Services
Office for Dependents' Medical Care
Office of the Surgeon General, U.S. Army
Denver, Colorado 80240

Book Review

Atlas of Cryosurgical Techniques in Ophthalmology by Charles D. Kelman, M.D. Published by the C. V. Mosby Company, St. Louis, Missouri, 1966. 118 pp with 140 illustrations. Price $18.75.

This Atlas has 140 fine illustrations by Daisy Stilwell and a very detailed text giving an unbiased and enthusiastic presentation of the 1966 status of cryosurgery in ophthalmology. The illustrations and text are well integrated and planned which obviates unnecessary backtracking through pages for continuity.

In general, adequate physical principles in heat transfer of this thermoelectric instrument are given; the principle involved in the control of freezing for successful use are explained.

Detailed steps in the separate procedures for routine extraction; for hypermaturity; for complicated and compound surgical procedures are thoroughly discussed.

There is a section on Retinal cryopexy, and short techniques of cryosurgery for iris prolapse, tumor biopsy and enucleation included "for completeness sake."

This probably is a volume that an ophthalmologist would want. The subject is fairly presented so that the inadequacies of this new procedure are revealed. Redesigned and modified instruments to obviate the awkwardness of the gross handle and entwining tubes are sure to come; there are explicit directions given by the author to ease many of these shortcomings.

A summing-up in the author's words, "this book is written for those who are willing . . . to try cryosurgery, . . . and to appraise its value."

JAY K. OSLER, M.D.
Bangor, Maine 04401

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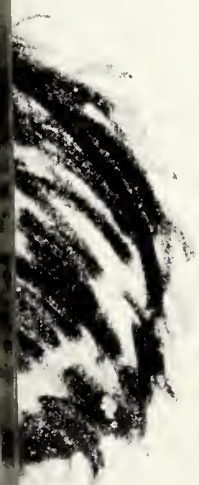
Use cautiously in individuals with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution patients who operate machinery or motor vehicles that drowsiness may result.

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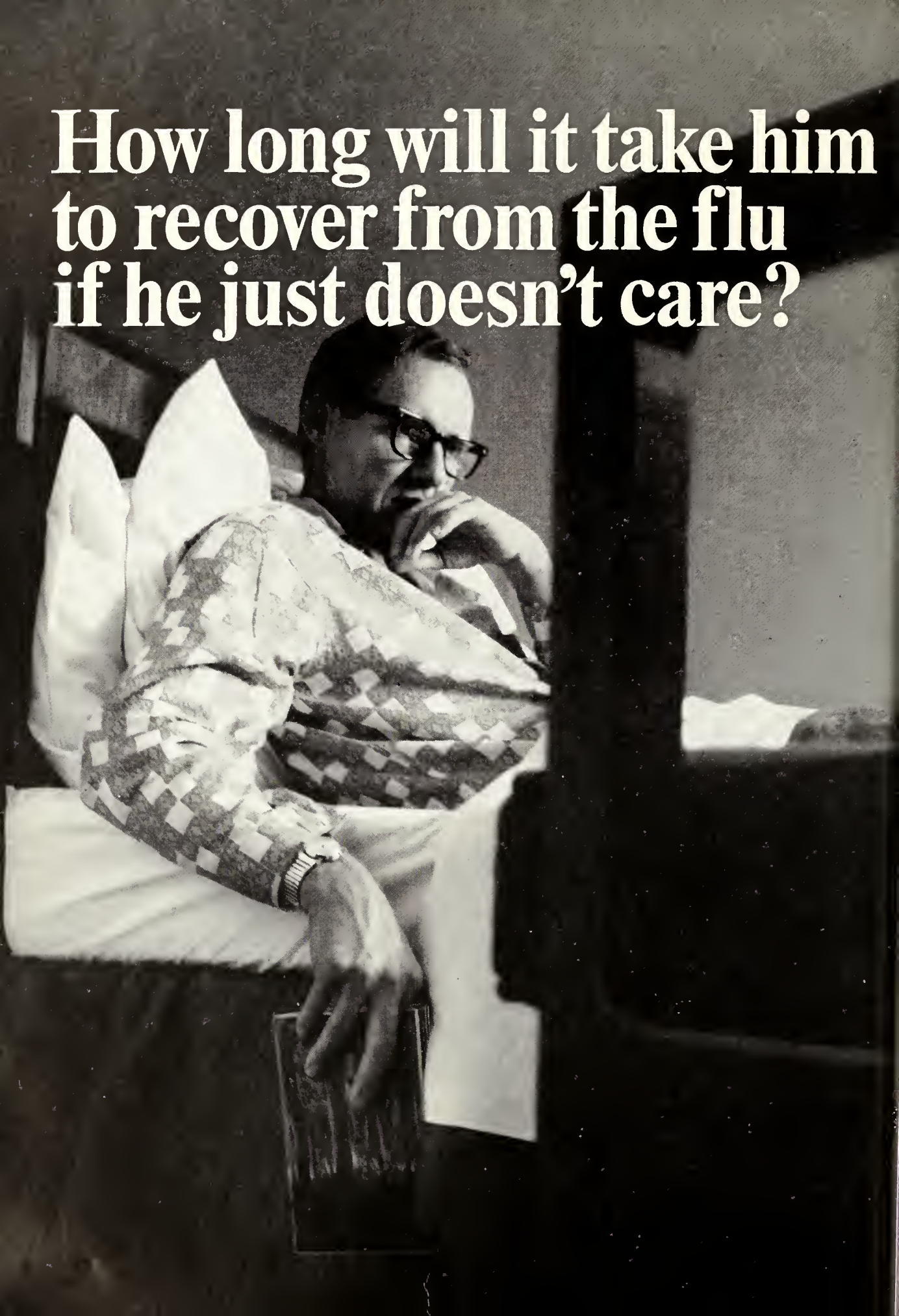
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*Multiple of adult Minimum Daily Requirement supplied.
†The need for these substances in human nutrition has not been established.

Indications: 1. Functional fatigue such as that often associated with: a depressing life experience or stressful time of life; advancing years; convalescence; limited activity or confinement. 2. Poor appetite and vitamin-mineral deficiency as they occur in: patients having faulty eating habits; geriatric patients who are losing interest in food; patients convalescing from debilitating illness or surgery.

Contraindications: As with other drugs with CNS stimulating action, Alertonic is contraindicated in hyperactive, agitated or severely anxious patients and in chorea or obsessive compulsive states.

Side effects: Reports of overstimulation have been rare. Patients who are known to be unduly sensitive to the effects of stimulant drugs should be observed carefully in the initial stages of treatment.

Dosage: Adults, 1 tablespoonful; children (over 15 years old), 1 to 2 teaspoonfuls; children (4 to 15 years old), 1 teaspoonful. To be taken three times daily 30 minutes before meals.

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Indications: Infections due to pathogens susceptible to oral penicillin G. Prophylaxis of rheumatic fever in patients with previous history of the disease.

Precautions: Skin rash, symptoms resembling those of serum sickness, or other manifestations of penicillin-allergy may occur. Measures for treating anaphylaxis should be readily available: epinephrine, oxygen and pressor drugs for relief of immediate allergic reactions; antihistamines and corticosteroids for delayed effects. Penicillin may delay or prevent the appearance of primary syphilitic lesions. Patients with gonorrhea who are suspected of concurrent syphilitic infections should be tested serologically for at least 3 months. Where lesions of primary syphilis are suspected, dark-field examination should precede use of penicillin. As with other antibiotics overgrowth of nonsusceptible organisms may occur; if so, discontinue and take appropriate measures. Treat β-hemolytic streptococcal infections with full therapeutic dosage for at least 10 days to prevent development of rheumatic fever or glomerulonephritis.

Contraindications: Infections caused by nonsusceptible organisms; history of penicillin sensitivity.

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SOURCE: DUNCAN, G.G.: SCIENCE NEWS LETTER, 83:403 (JUNE 29) 1963.

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SOURCE: JAMA 186:65 (OCT. 5) 1963.





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*SOURCE: ARCHIVES OF GENERAL PSYCHIATRY 8:26 (JUNE 1963).

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Ambar #2 Extentabs®

methamphetamine HCl 15 mg., phenobarbital 64.8 mg. (1 gr.) (Warning: may be habit forming)

BRIEF SUMMARY—**Indications:** Ambar suppresses appetite and helps offset emotional reactions to dieting. **Side Effects:** Nervousness or excitement occasionally noted, but usually infrequent at recommended dosages. Slight drowsiness has been reported rarely. **Precautions:** Administer with caution in the presence of cardiovascular disease or hypertension. **Contraindications:** Hypersensitivity to barbiturates or sympathomimetics; patients with advanced renal or hepatic disease. See package insert for further details.

A. H. ROBINS CO., Richmond, Virginia 23220

A·H·ROBINS



in sinusitis, colds, U. R. I.

Dimetapp® Extentabs®

(Dimetane® [brompheniramine maleate], 12 mg.; phenylephrine HCl, 15 mg.; phenylpropanolamine HCl, 15 mg.)

up to 10-12 hours clear breathing on one tablet

It's clear—Dimetapp lets your "stuffed-up" patients breathe easy again. Each hard-working Extentab brings welcome relief from the stuffiness, drip and congestion of upper respiratory conditions for up to 10-12 hours. Yet, patients seldom experience drowsiness or overstimulation. The key to success is the Dimetapp formula: Dimetane (brompheniramine maleate)—along with phenylephrine and phenylpropanolamine, two time-tested decongestants. They get the job done...in a hurry.

Contraindications: Hypersensitivity to antihistamines. Not recommended for use during pregnancy. **Precautions:** Until patient's response has been determined, he should be cautioned against engaging in operations requiring alertness. Administer with care to patients with cardiac or peripheral vascular diseases or hypertension. **Side Effects:** Hypersensitivity reactions including skin rashes, urticaria, hypotension and thrombocytopenia have been reported on rare occasions. Drowsiness, lassitude, nausea, giddiness, dryness of the mouth, mydriasis, increased irritability or excitement may be encountered. **Dosage:** 1 Extentab morning and evening. **Supplied:** Bottles of 100 and 500.

A.H. ROBINS CO., Richmond, Virginia 23220

A·H·ROBINS

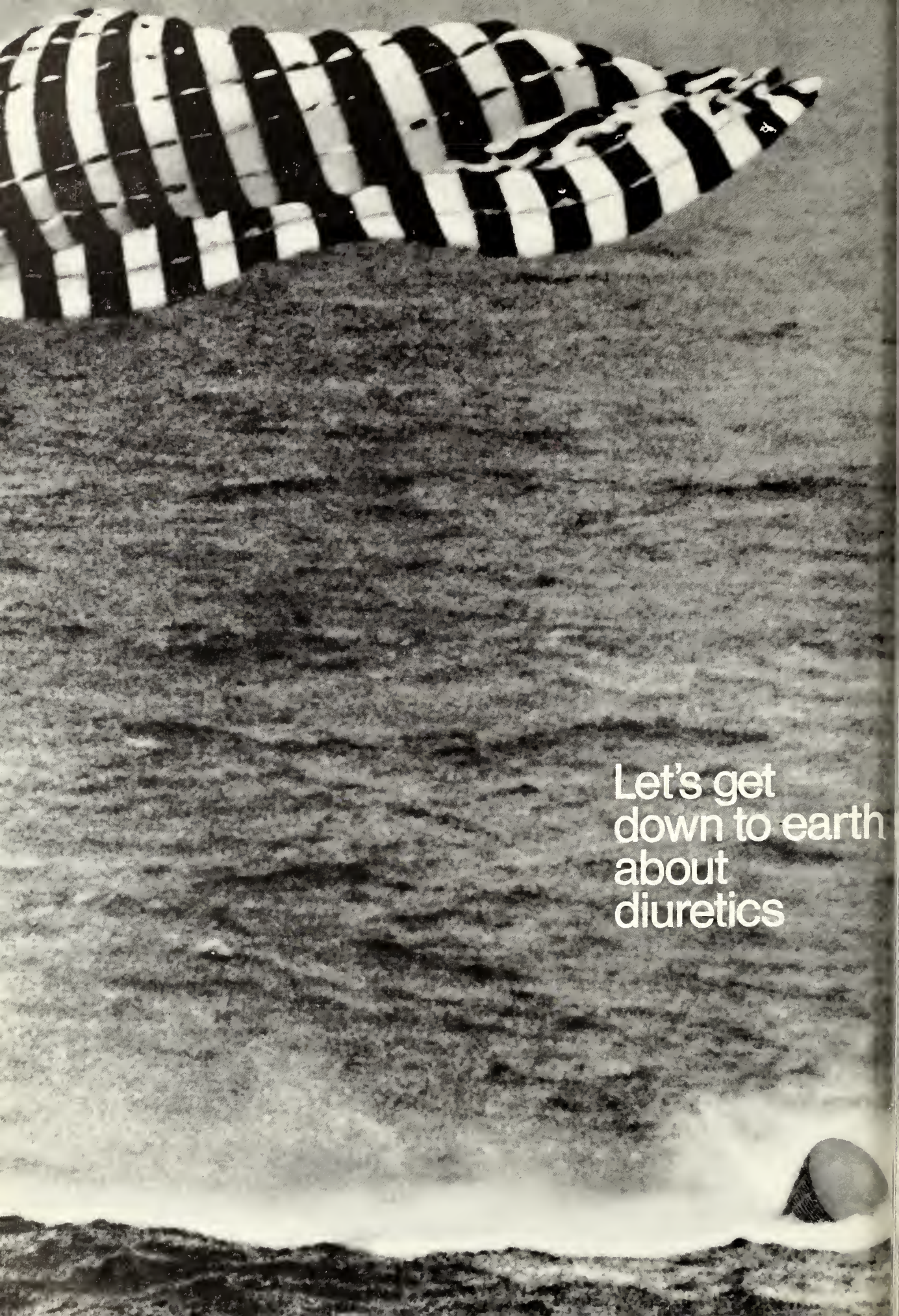
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. is not news. What's news is that we've embarked on the most ambitious film program *for professional medical audiences* ever launched against a single disease. A half-million dollar film project is underway—with technical advice from the nation's leading medical authorities.

ive of these films are available now—
ANCER IN CHILDREN, DIAGNOSIS AND MANAGEMENT OF CANCER OF THE COLON AND RECTUM, RAL CANCER, NURSING MANAGEMENT OF THE PATIENT WITH CANCER, and THE DENTIST AND ANCER. The balance will be released in 1967-1968.

s pioneers in the usage of medical films, we know their value as teaching tools. Our Units across the country know, too. Films are a vital part of their professional educational programs. We hope you will contact *your* local ACS Unit about this outstanding new series.

AMERICAN CANCER SOCIETY®


Let's get
down to earth
about
diuretics

With Hygroton, you'll discover that you can almost always use fewer tablets than is possible with other diuretics.

You may be told that a new short-acting diuretic was found more effective than Hygroton in congestive heart failure—but this was when twice the manufacturer's maximum recommended dose was given.* At the maximum recommended dose for both diuretics, two tablets of Hygroton were far and away more effective than five tablets of the other diuretic in producing natruresis and weight loss. And at these dosages, Hygroton costs only ⅓ as much as the other diuretic.

Since the discovery of chlorothiazide, the trend has been away from short-acting, multiple-dose, high-cost diuretics. With Hygroton you can usually do the job with just one tablet a day, or every other day.

More than any of the newer diuretics, Hygroton brings dosage and cost of medication down to earth.

*Brest, A. N., et al.:J. New Drugs 5:329, 1965.

Hygroton®
chlorthalidone

Indications: Hypertension and many types of edema involving retention of salt and water. **Contraindications:** Hypersensitivity and most cases of severe renal or hepatic disease. **Warning:** With administration of enteric-coated potassium supplements, the possibility of small bowel lesions should be kept in mind. **Precautions:** Reduce dosage of concomitant antihypertensive agents by at least one-half. Discontinue if the BUN rises or liver dysfunction is aggravated. Electrolyte imbalance and potassium depletion may occur; take special care in cirrhosis or severe ischemic heart disease, and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended. **Side Effects:** Dizziness, weakness, nausea, vomiting, hyperglycemia, hyperuricemia, headache, muscle cramps, postural hypotension, constipation, leukopenia, thrombocytopenia, agranulocytosis, impotence, dysuria, transient myopia, skin reactions, including urticaria and purpura, epigastric pain, or G.I. symptoms after prolonged administration. **Average Dosage:** One tablet (100 mg.) with breakfast daily or every other day. **Availability:** Tablets of 100 mg. in bottles of 100 and 1000. For full details, see the complete prescribing information. 6524-V(B)

HY-4735

Geigy Pharmaceuticals
Division of Geigy Chemical Corporation, Ardsley, New York

Geigy

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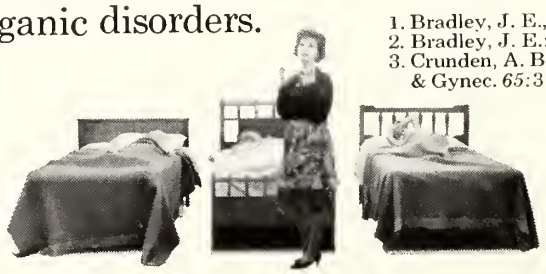
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Togetherness....

...can be rough when epidemics of nausea and vomiting strike a family. Emetrol offers prompt, safe relief. It is free from toxicity[1] or side effects[2,3] and will not mask symptoms of serious organic disorders.

1. Bradley, J. E., *et al.*: J. Pediat. *38*:41 (Jan.) 1951.
2. Bradley, J. E.: Mod. Med. *20*:71 (Oct. 15) 1952.
3. Crunden, A. B., Jr., and Davis, W. A.: Am. J. Obst. & Gynec. *65*:311 (Feb.) 1953.



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WILLIAM H. RORER, INC.
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Emetrol®
phosphorated carbohydrate solution
emesis control

Hydroxyproline – The Next Lab Test?

ALBANY, N.Y. – The liberation from the body of a chemical called HP, or hydroxyproline, has been associated by many scientists with a large number of disease conditions.

Great quantities of HP are excreted in the urine by patients with such diseases as overactivity of the parathyroid, thyroid or pituitary glands, rheumatoid arthritis, bone degeneration, psoriasis, burns, abnormal calcium storage, mental deficiency and several kinds of cancer.

The American Cancer Society reported recently that scientists at Albany Medical College of Union University have discovered evidence that, at least in cancer, the overexcretion of HP is due to both the building up and tearing down of the body's basic framework, collagen. The scientists are Edwin G. Taft, and Drs. Henry F. Hosley, Kenneth B. Olson, Sherman Gates and Richard T. Beebe.

Collagen is the tough, fibrous protein which supports various tissues and organs and the body as a whole. It is the leather in our hides, the matrix in our bones, the durable material in muscle, the container in which organs are wrapped, the stuff which separates cells.

Collagen is spun by youthful cells called blasts. In young growing animals and humans, and in cases where vigorous repair takes place following injury, a great deal of collagen is produced. In these cases, a certain amount of the raw materials from which collagen is made (particularly HP) spills over into the bloodstream, in which it is borne to the kidneys where it is filtered out of the system in urine.

In degenerative conditions, including many diseases of old age, collagen disintegrates into its constituent raw materials – like HP – and is excreted in urine.

With increasing evidence of the coincidence of high HP excretion in many diseases, the origin of excreted HP has become more and more vigorously debated. Some say the excessive excreted HP comes from blasts working overtime in building up collagen; others contend it comes from collagen erosion by disease.

The Albany group now says both sides probably are right – at least so far as cancer is concerned. They found increased HP excretion almost exclusively in patients whose cancer had spread to bone. HP excretion also rose with heightened blast activity. Bone destruction accounted for some of the excess HP excretion, but futile efforts by blasts to build up bone were responsible for even more of the HP excretion.

The studies showed excessive HP excretion in cases of "clubbing" of the finger joints – the thickening of joint soft tissues – even when bone was not involved. Clubbing often occurs in chronic lung diseases, especially lung cancer.

In these studies, the scientists investigated 18 normal adults, as controls, and these numbers of patients with cancers of these organs: prostate, 21; breast, 27; lung, 10; and multiple myeloma (in which bones are eroded and blood proteins become abnormal), 19; and smaller numbers of miscellaneous cancers.

In most cases where HP excretion was abnormally high, the cancer affected the collagen of bone. The mean for the normal people was 25.5 mg of HP excreted every 24 hours.

In contrast, patients with bone-involved cancers of these sites showed means of: 77.9, prostate; 50.5, breast; about 60, lung; and 41.7, multiple myeloma. The range of readings was wide, but, generally, the more damage and repair in bone the higher the HP excretion.

The group are continuing their studies to determine whether HP excretion measurements will tell how patients are doing on various treatments. It is possible that HP readings might prove a valuable guide to physicians in treating patients, although this has yet to be established.

American Cancer Society News Service Release



when he just can't sleep

Tuinal®

Sodium Amobarbital and Sodium Secobarbital

(One-Half Sodium Amobarbital and One-Half Sodium Secobarbital)



Tuinal helps wakeful patients fall asleep fast, stay asleep all night.

Indications: Tuinal, comprised of equal parts of Seconal® Sodium (sodium secobarbital, Lilly) and Amytal® Sodium (sodium amobarbital, Lilly), is indicated for prompt and moderately long-acting hypnosis.

Contraindications: Barbiturates should not be administered to anyone with a history of porphyria, nor should they be given in the presence of uncontrolled pain, because excitement may result.

Warning: May be habit-forming.

Precautions: Tuinal should be used cautiously in patients with decreased liver function, since prolongation of effect may occur.

Adverse Reactions: Idiosyncrasy, such as excitement, hangover, or pain, may appear. Hypersensitivity reactions occur in some patients, especially in those with asthma, urticaria, or angioneurotic edema.



Dosage: 1½ to 3 grains at bedtime.

Supplied: ¾, 1½, and 3-grain Pulvules®.

Additional information available to physicians upon request.
Eli Lilly and Company • Indianapolis, Indiana 46206

Lilly

700196

Maine Heart Association Notes
116 State Street, Augusta, Maine

Hypertension And High Hematocrit
Another Clue To Renal Arterial Disease

The renal origin of both erythropoietin and renin suggests a possible etiologic relation between renal hypertension and polycythemia.

. . . The addition of arteriography to the usual renal radiographic technics has permitted the separation of patients with renal lesions into those with renal arterial stenosis and those with parenchymal lesions. . . . Using these technics this study was undertaken to determine the incidence of high hematocrit in hypertensive and normotensive patients with renal arterial disease or pyelonephritis.

The possible relation between renal arterial disease and polycythemia is supported by the significantly higher incidence of elevated hematocrits in patients with the occlusive vascular lesion. It must be stressed, however, that only a minority of patients with renal arterial disease develop high hematocrit.

From this study, there is no indication why high hematocrit occurs in some patients with renal arterial disease but is absent in others with equally severe stenosis.

There must be other factors in addition to hypoxia that determine increased erythropoietin secretion in patients with renal arterial disease, because in those with ischemic atrophy high hematocrit was not a constant feature.

The incidence of high hematocrit was studied in 301 hypertensive and normotensive patients with or without renal arterial disease or pyelonephritis. When hypertensive patients were subdivided into those with essential hypertension and those with renal arterial disease associated with hypertension, there was a significantly higher incidence of high hematocrit in those with renal arterial disease. High hematocrit was also found to have a higher incidence in hypertensive patients with unilateral renal atrophy due to ischemia. . . . if high hematocrit is found in a hypertensive patient, or a normotensive patient with peripheral atherosclerosis which is neither of the primary type nor explained by any known cause, occlusive renal arterial disease should be strongly considered.

Submitted by, Jacob B. Dana, M.D., Maine Heart Association.

Reference: Tarazi, Robert C. et al, The American Journal of Cardiology, Vol. 18, pages 855-858, 1966.

when congestion is complicated by sulfa-susceptible bacterial invaders in the upper respiratory tract...



re-enforce your decongestant therapy

prescribe economical Trisulfaminic®

Each tablet contains: Triaminic® 25 mg. (phenylpropanolamine hydrochloride 12.5 mg., pheniramine maleate 6.25 mg., pyrilamine maleate 6.25 mg.); Trisulfapyrimidines, U.S.P. 0.5 Gm. (sulfadiazine 0.167 Gm., sulfamerazine 0.167 Gm., sulfamethazine 0.167 Gm.)

PHARMACOLOGY: Triaminic decongests and promotes drainage of nasal and paranasal passages, and prevents any further histamine-induced damage; the triple sulfonamides inhibit susceptible bacterial invaders. INDICATIONS: For congestion and infection of the upper respiratory tract caused by sulfa-susceptible organisms. DOSAGE: Adults: 2 to 4 tablets initially, followed by 2 tablets every 6 hours. Medication should be continued until patient has been afebrile for 3 days. ADVANTAGES: The advantages of Trisulfaminic in upper respiratory infections are: freedom from narcotics or alcohol; therapeutic reliability; safety; economy; ease of administration; freedom from potential sensitization to broad-spectrum antibiotics which may be reserved for lower respiratory or other infections caused by susceptible organisms. CONTRAINDICATIONS: Contraindicated in sulfonamide and antihistamine sensitivity, impaired renal function, pregnancy approaching term, and in premature infants and newborn infants during the first month of life. Do not use in patients with glaucoma, prostatic hypertrophy, stenosing peptic ulcer, pyloroduodenal or bladder neck obstruction. WARNING: Use only after careful evaluation in patients with liver or renal damage, urinary obstruction, or blood dyscrasias. Deaths have been reported from hypersensitivity reactions with administration of sulfonamides. In intermittent or prolonged therapy, blood counts and liver and kidney function tests should be performed periodically. Sulfonamide therapy may potentiate the hypoglycemic action of sulfonylureas. PRECAUTIONS: Use with caution in patients with histories of significant allergy or asthma. Assure an adequate fluid intake. Because the antihistamines may cause drowsiness of varying degree, warn patients about activities requiring alertness such as driving a car or operating dangerous machinery. Use with caution in the presence of hypertension, hyperthyroidism, cardiovascular disease and diabetes. ADVERSE REACTIONS: As in all sulfonamide therapy, the following reactions may occur: headache, nausea, vomiting, diarrhea, icterus, hepatitis, pancreatitis, urticaria, rash, fever, cyanosis, hematuria, crystalluria, proteinuria, blood dyscrasias, petechiae, purpura, neuropathy and injection of the conjunctiva and sclera. If one or more of these reactions occur, the drug should be discontinued. With antihistaminic therapy there have been reports of sedation varying from mild drowsiness to deep sleep, dizziness, lassitude, inability to concentrate, fatigue, incoordination, tinnitus, blurred vision, diplopia, euphoria, nervousness, insomnia, tremors, palpitation, hypotension, headache, chest tightness, urinary frequency, dysuria, tingling of the hands, dryness of the mouth, throat, and nose, gastrointestinal disturbances such as epigastric distress, anorexia, nausea, vomiting, constipation and diarrhea and very rarely, leukopenia and agranulocytosis. Adverse reactions reported with the use of sympathomimetic amines include anxiety, tension, restlessness, nervousness, tremor, weakness, insomnia, headache, palpitation, tachycardia, angina, elevation of blood pressure, sweating, mydriasis, anorexia, nausea, vomiting, dizziness, constipation, and dysuria due to vesicle sphincter spasm. PACKAGE INFORMATION: Trisulfaminic Tablets: Supplied in bottles of 100 tablets. CAUTION: Federal law prohibits dispensing without prescription.

DORSEY LABORATORIES · *a division of The Wander Company* · **LINCOLN, NEBRASKA**

Against these three major pathogens…



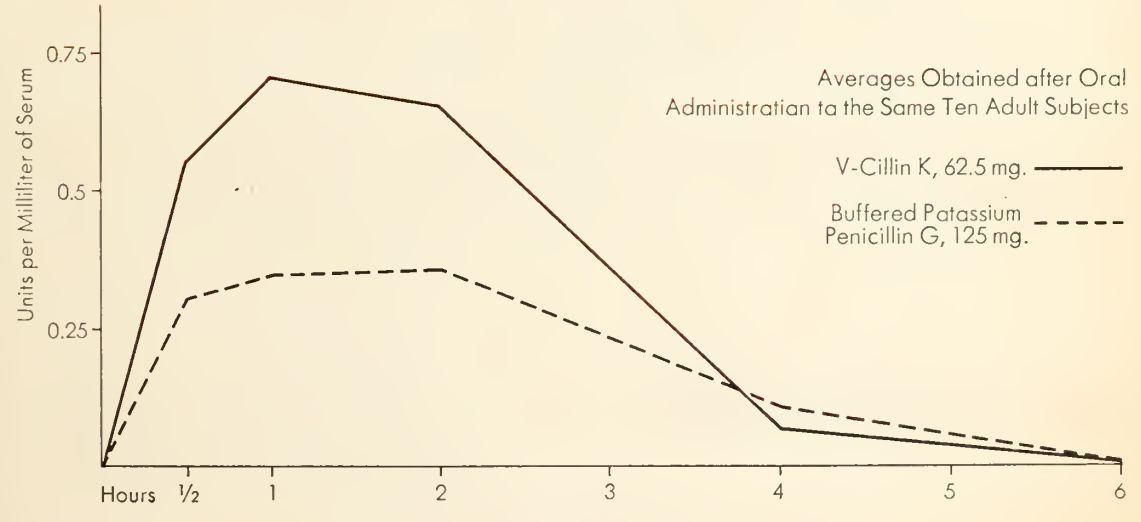
V-Cillin K® provides unexcelled oral antibacterial activity

because it combines a high degree of in-vitro activity...

Antibiotic	Staph. Aureus (Penicillin-Sensitive) MIC (mcg./ml.) Median	Range	Streptacoccus, Graup A MIC (mcg./ml.) Median	Range	Diplacaccus Pneumaniae MIC (mcg /ml.) Median	Range
Penicillin V	0.02	0.02-0.04	0.02	0.003-0.4	0.01	0.005-0.2
Penicillin G	0.02	0.005-1.6	0.005	0.002-0.2	0.02	0.01-0.1
Methicillin	1.6	0.4-6.3	0.2	0.1-0.4	0.2	0.1-1.6
Oxacillin	0.4	0.1-3.1	0.04	0.02-0.4	0.1	0.04-0.8
Claxacillin	0.2	0.2-0.8	0.1	0.1-0.8	—	—
Nafcillin	0.4	0.2-0.8	0.04	0.02-0.1	0.02	0.02-0.2
Ampicillin	0.2	0.1-0.8	0.02	0.01-0.04	0.02	0.01-0.04

Adopted from Klein, J. O., and Finland, M. New England J. Med., 269 1019, 1963.

with high blood levels, even in the presence of food



Adopted from Griffith, R. S., and Black, H. R. Current Ther. Res., 6 253, 1964.

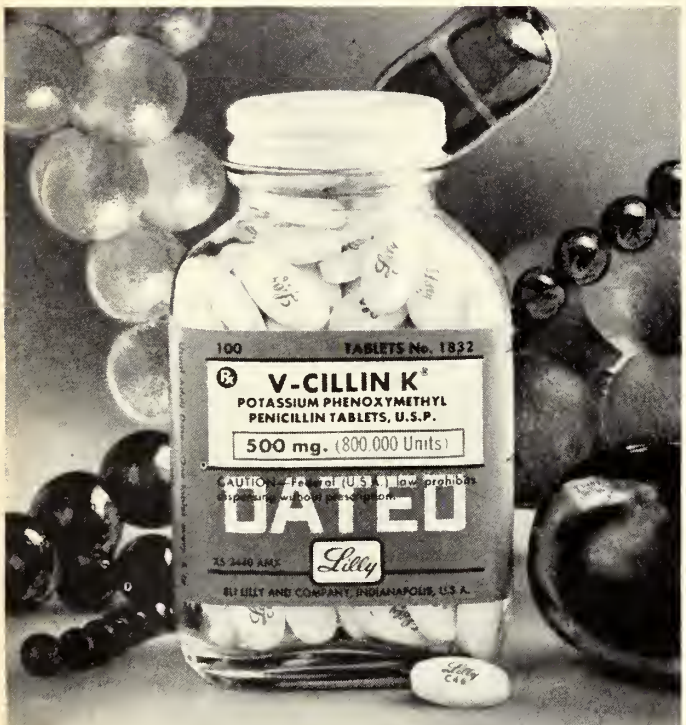
V-Cillin K®

Lilly 700157

Potassium Phenoxymethyl Penicillin

(See next page for prescribing information.

New 500 mg. tablets...a more convenient way to give high doses



Description: V-Cillin K is the potassium salt of V-Cillin® (phenoxymethyl penicillin, Lilly). This chemically improved form combines acid stability with immediate solubility and rapid absorption. Higher serum levels are obtained more rapidly with this penicillin than with equal oral doses of penicillin G. The higher serum levels and acid stability of V-Cillin K make it a more dependable penicillin for oral use.

V-Cillin K, Pediatric, is an oral solution of clinically proved V-Cillin K in teaspoon dosage form. When mixed as directed, each 5 cc. (approximately one teaspoonful) will contain 125 mg. (200,000 units) phenoxymethyl penicillin as the potassium salt.

Indications: V-Cillin K has been shown to be effective in the treatment of streptococcus, pneumococcus, and gonococcus infections as well as infections caused by sensitive strains of staphylococci. It may be used for the prophylaxis of streptococcus infections in patients with a history of rheumatic fever and for the prevention of bacterial endocarditis after tonsillectomy and tooth extraction in those patients with a history of rheumatic fever or congenital heart disease.

Contraindication: V-Cillin K should not be administered to a patient with a history of penicillin hypersensitivity.

Precautions: V-Cillin K should be used cautiously, if at all, in a patient with a strongly positive history of allergy. Reactions occur more frequently in individuals with bronchial asthma or other allergies or in those who have previously demonstrated sensitivity to penicillin. If hypersensitivity reactions occur, the drug should be discontinued.

Adverse Reactions: Although serious allergic reactions are much less common with administration of oral penicillin than with intramuscular forms, skin rash, symptoms resembling those of serum sickness, or other manifestations of penicillin allergy may occur. When penicillin is administered, measures for treating anaphylaxis should be readily available. Those include epinephrine, oxygen, and pressor drugs for relief of immediate allergic manifestations as well as antihistamines and corticosteroids for delayed effects.

The use of antimicrobial agents may be associated with the overgrowth of antibiotic-resistant organisms; in such a case, antibiotic administration should be stopped and appropriate measures taken.

Administration and Dosage: For Tablets V-Cillin K and for V-Cillin K, Pediatric, the usual dosage ranges from 125 mg. (200,000 units) three times a day to 500 mg. (800,000 units) every four hours. For infants, the daily dosage may be 50 mg. per Kg. of body weight divided into three doses.

Beta-hemolytic streptococcus infections without associated bacteremia may be treated with 200,000 to 400,000 units three times a day. Therapy should be continued for a minimum of ten days to prevent development of rheumatic fever and/or other serious complications. Dosage for routine streptococcus prophylaxis in patients with a history of rheumatic fever or congenital heart disease may be 200,000 units once or twice daily. When such patients undergo tonsillectomy, tooth extraction, or other minor surgery, the prophylactic dose should be 500,000 units every six hours given two days prior to surgery and for two days postoperatively. If oral medication is not feasible on the day of surgery, parenteral therapy should be considered. Mild to moderately severe pneumococcus pneumonia has been treated effectively with 250 mg. every six hours.

In staphylococcus infections, 400,000 units or more should be given every six to eight hours in conjunction with indicated surgical procedures.

For gonorrhea in males, 500 mg. (800,000 units) every six hours for three doses may be employed; in females, 500 mg. every four hours for six doses are recommended. Patients with a suspected lesion of syphilis should have a dark-field examination before receiving penicillin and monthly serologic tests for a minimum of three months.

How Supplied: Tablets V-Cillin K, U.S.P., 125 mg. (200,000 units), bottles of 50 and 100, 250 mg. (400,000 units), and 500 mg. (800,000 units) in bottles of 24 and 100.

V-Cillin K, Pediatric, for Oral Solution, 125 mg. (200,000 units) per 5 cc. of solution, in 40, 80, and 150-cc.-size packages.

Additional information available to physicians upon request. *Eli Lilly and Company, Indianapolis, Indiana 46206.*

Lilly

700155

One 'Ornade' Spansule Capsule works all day (or all night) to make your patient with a cold a lot more comfortable.

'Ornade', the unique oral nasal decongestant with a drying agent, a decongestant and an antihistamine in the ideal dosage form

Ornade® Spansule® Capsules

Trademark brand of sustained release capsules

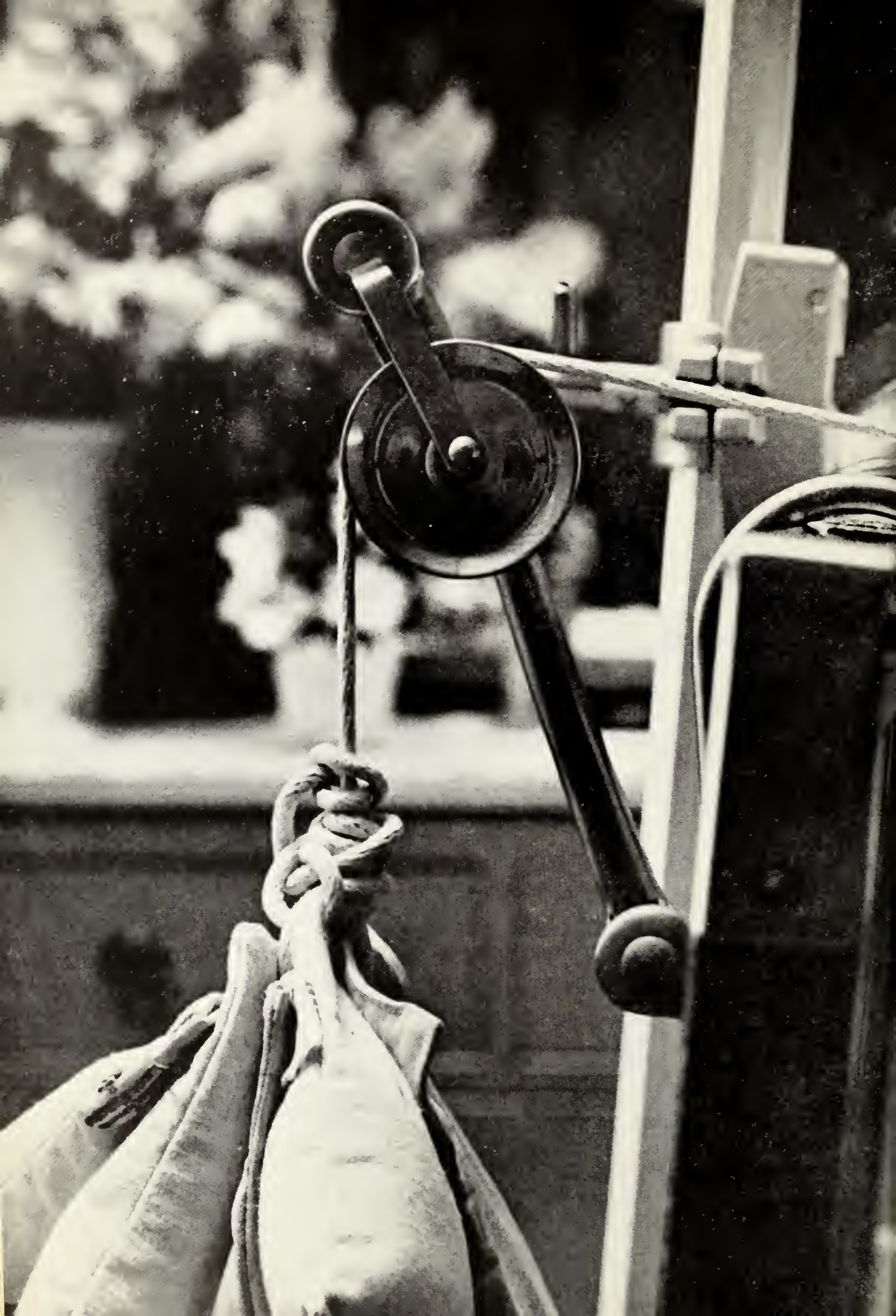
ALL-DAY OR ALL-NIGHT RELIEF

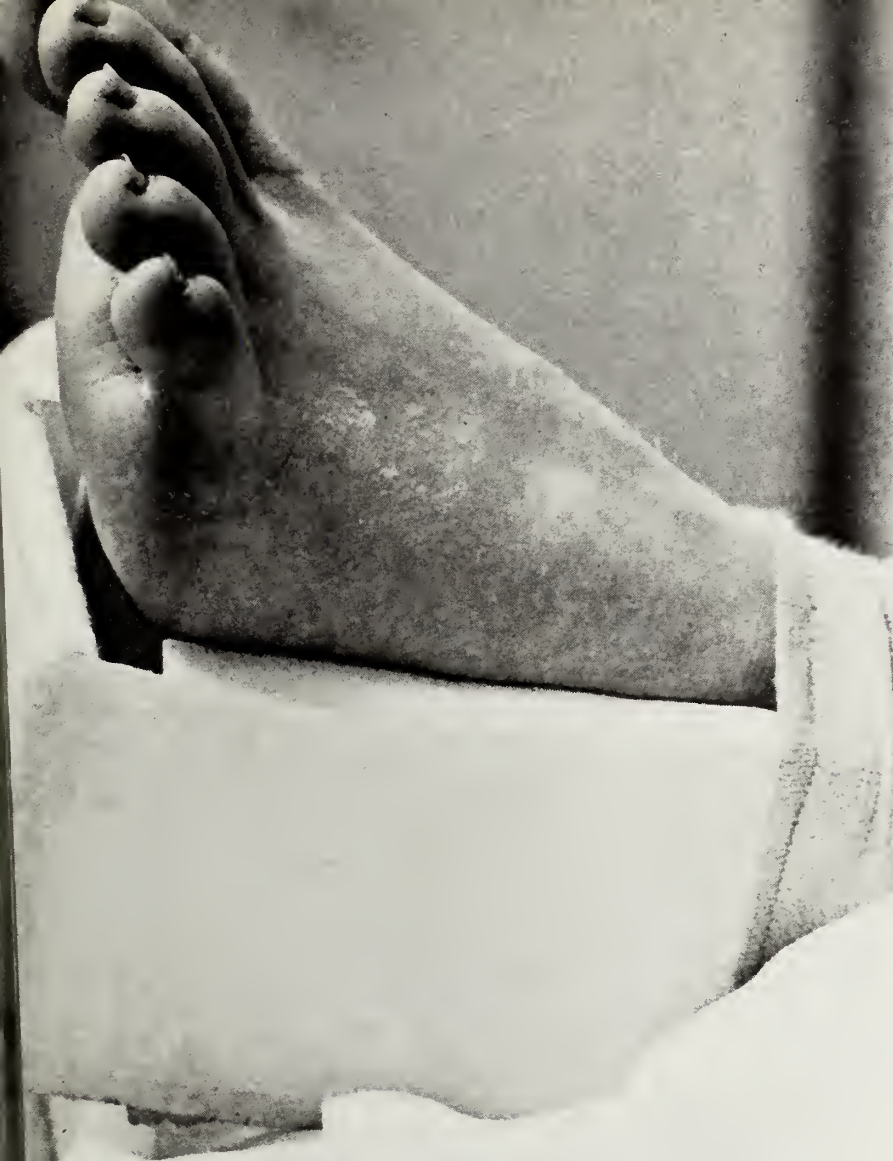


Each capsule contains 8 mg. of Teldrin® (brand of chlorpheniramine maleate), 50 mg. of phenylpropanolamine hydrochloride, and 2.5 mg. of isopropamide, as the iodide.

The following is a brief precautionary statement. Before prescribing, the physician should be familiar with the complete prescribing information in SK&F literature or *PDR*. *Contraindications:* Patients with glaucoma, prostatic hypertrophy, stenosing peptic ulcer, pyloroduodenal obstruction, or bladder neck obstruction. *Precautions:* Use with caution in the presence of hypertension, hyperthyroidism, or coronary artery disease; and, in patients who may operate vehicles or machinery, warn of possible drowsiness. *Note:* Since the iodine in isopropamide iodide may alter PBI test results and will suppress I^{131} uptake, it is suggested that 'Ornade' be discontinued one week before these tests. *Side effects:* Drowsiness; excessive dryness of nose, throat, or mouth; nervousness; or insomnia may occur rarely, but are usually mild and transitory. Other known possible side effects of the individual ingredients are: nausea, vomiting, diarrhea, rash, dizziness, fatigue, tightness of chest, abdominal pain, irritability, tachycardia, headache, and difficulty in urination.

Smith Kline & French Laboratories SK&F





TABLETS

Equagesic®

(meprobamate and ethoheptazine citrate with aspirin)

Wyeth®

Precautions: Keep out of reach of children. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use of meprobamate may result in dependence or habituation in susceptible persons—as ex-addicts, alcoholics, severe psychoneurotics. Withdraw gradually after prolonged high dosage to avoid possibly severe withdrawal reactions including epileptiform seizures. Warn patients of possible reduced alcohol tolerance. If drowsiness, ataxia or visual disturbances occur, reduce dose. If symptoms persist, caution patients against operating machinery or driving. Give cautiously to patients with suicidal tendencies. Treat attempted suicide with immediate gastric lavage and appropriate supportive therapy

Side Effects: Ethoheptazine and aspirin may occasionally cause nausea, vomiting, epigastric distress, and rarely dizziness and CNS depression. Overdosage may result in salicylate intoxication. Meprobamate rarely causes allergic or idiosyncratic reactions. These reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Mild reactions are characterized by urticarial or erythematous maculopapular rash. Acute nonthrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever have been reported. Meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioedema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. A few cases of leukopenia, usually transient, have been reported following prolonged dosage. Rarely, cases of aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis, and hemolytic anemia have been reported; almost always, in the presence of known toxic agents.

Contraindications: History of sensitivity or severe intolerance to aspirin or meprobamate.

Composition: 150 mg. meprobamate, 75 mg. ethoheptazine citrate and 250 mg. aspirin per tablet.

Wyeth Laboratories **Philadelphia, Pa.**

Weighing on his mind, too

When pain evokes anxiety and tension, thereby heightening patient discomfort, a simple analgesic may only touch on part of the problem.

This single-prescription, nonnarcotic product, however, usually provides effective analgesia *and* helps put the patient's mind at ease.



fluocinolone acetonide — an original steroid from

SYNTEX

LABORATORIES INC., PALO ALTO, CALIF.

controls infected inflammatory dermatoses that start from scratch



Neo-Synalar

fluocinolone acetonide-neomycin sulfate cream

Cream

The "itch-scratch" cycle usually associated with inflammation often results in infected dermatoses because broken skin surfaces are particularly vulnerable to pathogenic bacteria.[1] To treat infected inflammatory dermatoses, Neo-Synalar Cream combines the most active topical corticosteroid with a highly reliable antibiotic generally reserved for topical application.

In Neo-Synalar, fluocinoline acetonide controls the inflammation and provides rapid relief from associated pruritus. At the same time, its antibacterial component—neomycin—combats superficial infection caused by many gram-positive and gram-negative bacilli[2] that often colonize and thrive on abraded skin.[1]

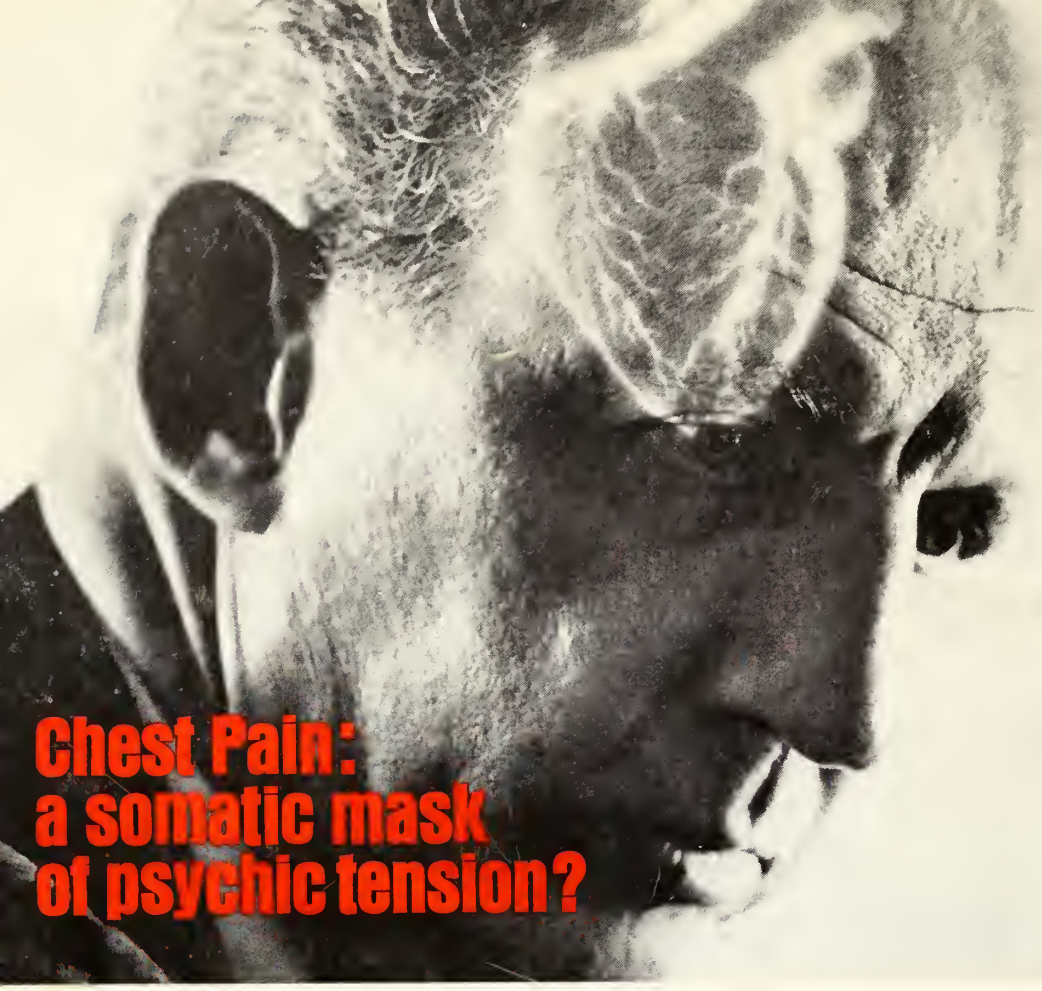
A specially formulated vanishing cream base that is greaseless and odor free makes Neo-Synalar cosmetically appealing, and encourages greater patient cooperation.

controls the infection

stops the scratch

Contraindications: Tuberculous, fungal, and most viral lesions of the skin (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of its components. **Precautions:** Neomycin rarely produces allergic reactions. Prolonged use of any antibiotic may result in overgrowth of nonsusceptible organisms; if this occurs, appropriate therapy should be instituted. Where severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. **Side Effects:** Side effects are not ordinarily encountered with topical corticosteroids. As with all drugs, however, a few patients may react unfavorably to Neo-Synalar under certain conditions. **Availability:** Neo-Synalar Cream (0.025% fluocinolone acetonide, neomycin sulfate, equivalent to 0.35% neomycin base), 5 and 15 Gm. tubes.

References: 1. Pillsbury, D. M., Shelley, W. B., and Kligman, A. M.: A manual of cutaneous medicine, Philadelphia, Saunders, 1961, p. 79. **2.** Barber, M., and Garrod, L. P.: Antibiotic and chemotherapy, Baltimore, Williams and Wilkins, 1963, p. 111.



Chest Pain: a somatic mask of psychic tension?

"Heart symptoms"—chest pain, tachycardia, arrhythmia—invariably alarm and preoccupy the patient, though they may be completely without organic basis. Such symptoms often are somatic masks of psychic tension, arising from constant encounters with stressful situations.

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Contraindications: Infants, patients with history of convulsive disorders or glaucoma.

Warning: Not of value in the treatment of psychotic patients, and should not be employed in lieu of appropriate treatment.

Precautions: Limit dosage to smallest effective amount in elderly patients (not more than 1 mg, one or two times daily) to preclude ataxia or oversedation. Advise patients against possibly hazardous procedures until correct maintenance dosage is established; driving during therapy not recommended. In general, concurrent use with other psychotropic agents is not recommended. Warn patients of possible combined effects with alcohol. Safe use in pregnancy not established. Observe usual precautions in impaired renal or hepatic function and in patients who may be suicidal; periodic blood counts and liver function tests advisable in long-term use. Cease therapy gradually.

Side Effects: Side effects (usually dose-related) are fatigue, drowsiness and ataxia. Also reported: mild nausea, dizziness, blurred vision, diplopia, headache, incontinence, slurred speech, tremor and skin rash; paradoxical reactions (excitement, depression, stimulation, sleep disturbances and hallucinations) and changes in EEG patterns. Abrupt cessation after prolonged overdosage may produce withdrawal symptoms similar to those seen with barbiturates, meprobamate and chlordiazepoxide HCl.

Dosage — Adults: Mild to moderate psychoneurotic reactions, 2 to 5 mg b.i.d. or t.i.d.; severe psychoneurotic reactions, 5 to 10 mg t.i.d. or q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hrs, then 5 mg t.i.d. or q.i.d. as needed; muscle spasm with cerebral palsy or athetosis, 2 to 10 mg t.i.d. or q.i.d. Geriatric patients: 1 or 2 mg/day initially, increase gradually as needed.

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Central Maine General Hospital Number

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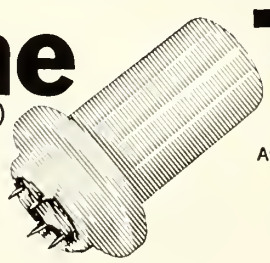
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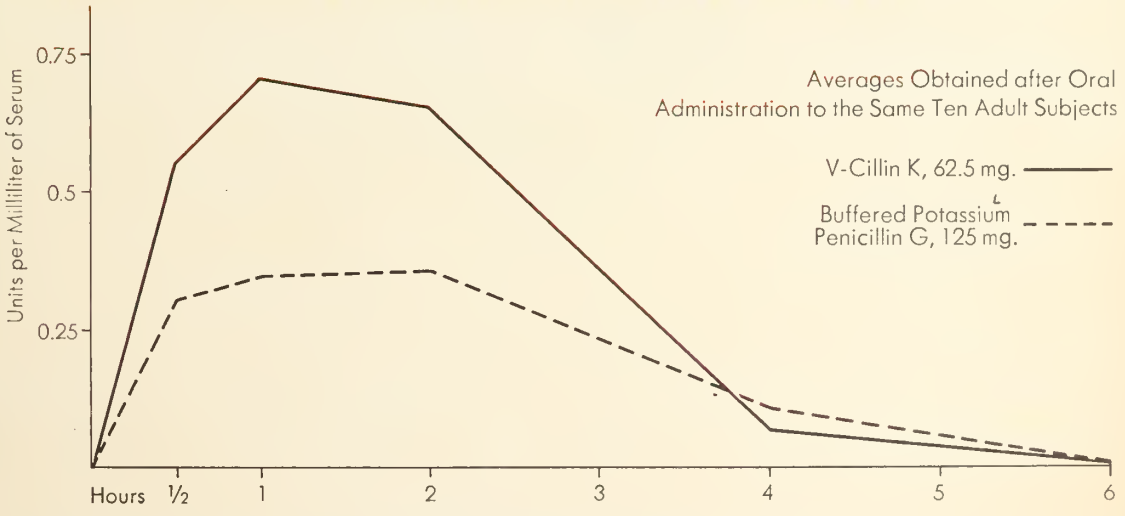
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Penicillin G	0.02	0.005-1.6	0.005	0.002-0.2	0.02	0.01-0.1
Methicillin	1.6	0.4-6.3	0.2	0.1-0.4	0.2	0.1-1.6
Oxacillin	0.4	0.1-3.1	0.04	0.02-0.4	0.1	0.04-0.8
Cloxacillin	0.2	0.2-0.8	0.1	0.1-0.8	—	—
Nafcillin	0.4	0.2-0.8	0.04	0.02-0.1	0.02	0.02-0.2
Ampicillin	0.2	0.1-0.8	0.02	0.01-0.04	0.02	0.01-0.04

Adapted from Klein, J. O., and Finland, M.: New England J. Med ,269 1019, 1963.

with high blood levels, even in the presence of food



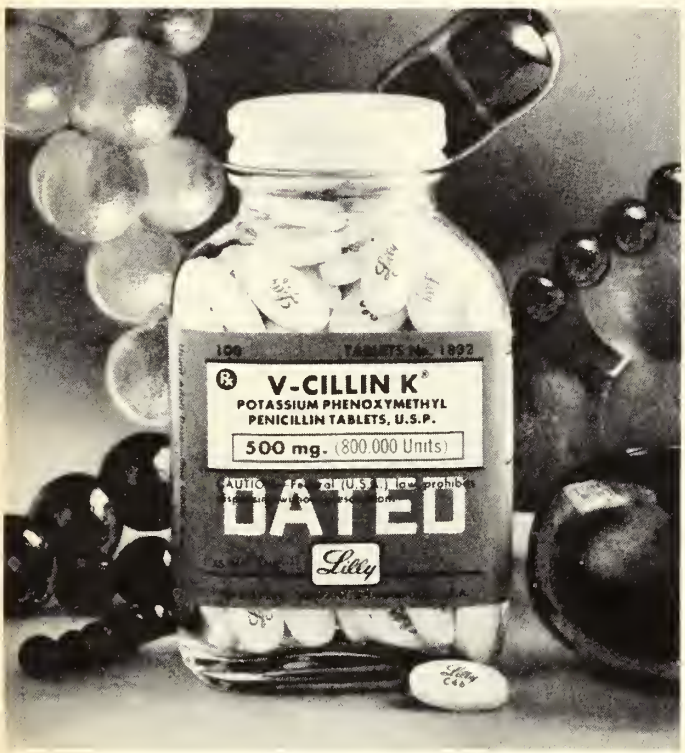
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V-Cillin K, Pediatric, is an oral solution of clinically proved V-Cillin K in teaspoon dosage form. When mixed as directed, each 5 cc. (approximately one teaspoonful) will contain 125 mg. (200,000 units) phenoxymethyl penicillin as the potassium salt.

Indications: V-Cillin K has been shown to be effective in the treatment of streptococcus, pneumococcus, and gonococcus infections as well as infections caused by sensitive strains of staphylococci. It may be used for the prophylaxis of streptococcus infections in patients with a history of rheumatic fever and for the prevention of bacterial endocarditis after tonsillectomy and tooth extraction in those patients with a history of rheumatic fever or congenital heart disease.

Contraindication: V-Cillin K should not be administered to a patient with a history of penicillin hypersensitivity.

Precautions: V-Cillin K should be used cautiously, if at all, in a patient with a strongly positive history of allergy. Reactions occur more frequently in individuals with bronchial asthma or other allergies or in those who have previously demonstrated sensitivity to penicillin. If hypersensitivity reactions occur, the drug should be discontinued.

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The use of antimicrobial agents may be associated with the ove... growth of antibiotic-resistant organisms; in such a case, antibiotic ... ministration should be stopped and appropriate measures taken.

Administration and Dosage: For Tablets V-Cillin K and for V-C... K, Pediatric, the usual dosage ranges from 125 mg. (200,000 un... three times a day to 500 mg. (800,000 units) every four hours. For ... fants, the daily dosage may be 50 mg. per Kg. of body weight divide... into three doses.

Beta-hemolytic streptococcus infections without associated bac... remia may be treated with 200,000 to 400,000 units three times a da... Therapy should be continued for a minimum of ten days to prevent d... velopment of rheumatic fever and/or other serious complications. Do... age for routine streptococcus prophylaxis in patients with a history ... rheumatic fever or congenital heart disease may be 200,000 units on... or twice daily. When such patients undergo tonsillectomy, tooth extra... tion, or other minor surgery, the prophylactic dose should be 500,... units every six hours given two days prior to surgery and for two da... postoperatively. If oral medication is not feasible on the day of s... gery, parenteral therapy should be considered. Mild to moderate ... severe pneumococcus pneumonia has been treated effectively w... 250 mg. every six hours.

In staphylococcus infections, 400,000 units or more should be gi... every six to eight hours in conjunction with indicated surgical proc... dures.

For gonorrhea in males, 500 mg. (800,000 units) every six hours ... three doses may be employed; in females, 500 mg. every four hours ... six doses are recommended. Patients with a suspected lesion of syp... should have a dark-field examination before receiving penicillin a... monthly serologic tests for a minimum of three months.

How Supplied: Tablets V-Cillin K, U.S.P., 125 mg. (200,000 units) ... bottles of 50 and 100, 250 mg. (400,000 units), and 500 mg. (800,0... units) in bottles of 24 and 100.

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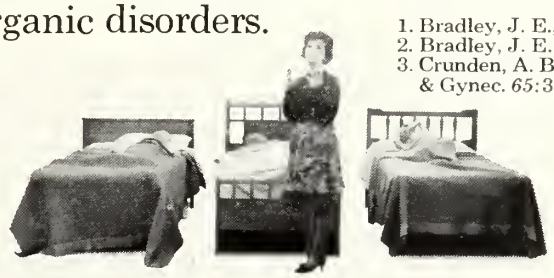
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1. Bradley, J. E., *et al.*: J. Pediat. *38*:41 (Jan.) 1951.
2. Bradley, J. E.: Mod. Med. *20*:71 (Oct. 15) 1952.
3. Crunden, A. B., Jr., and Davis, W. A.: Am. J. Obst. & Gynec. *65*:311 (Feb.) 1953.



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INFLAMMATION:
A cellular fight for life

A SYNTEX REPORT based on recently developed hypotheses about topical corticosteroids, including the cellular theories of inflammation by Thomas F. Dougherty, Ph.D., University of Utah.

You are looking at a fibroblast fighting for life. This cell—one of the most common found in connective tissue—has literally been poisoned by cytotoxins released from other cells that have ruptured. Soon, if the abnormal activity of this fibroblast does not cease, it, too, will rupture and die—one more casualty in the inflammatory wave of destruction precipitated by injury.

Until a short time ago no one had ever witnessed such a scene at the cellular level. Now, through advanced cinemicrographic techniques, it is possible to view and photograph the inflammatory process as produced experimentally in living animal tissue. This method permits new insight into the mechanism of inflammation and the role of corticosteroids in therapeutic management. Equally important, these techniques shed new light on factors that may make one corticosteroid more effective than another—factors that can be correlated with other chemical, biologic, and clinical parameters.

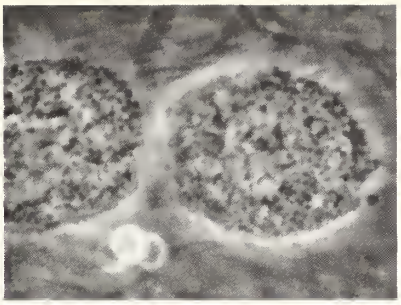


Visual evidence of how corticosteroids influence the inflammatory reaction

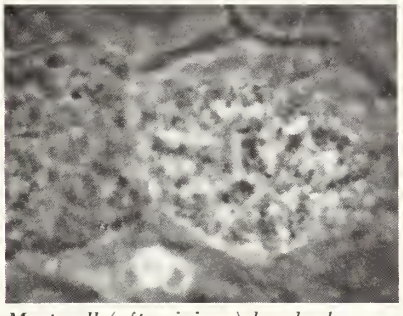
Working with phase-contrast cinemicrography on living animal tissue, Doctors Thomas F. Dougherty and David Berliner of the University of Utah College of Medicine have actually filmed cellular events that occur during the inflammatory reaction. This remarkable study* and additional work by these investigators, as well as by others, have established a new theoretical biologic basis for the antiinflammatory effect of the corticosteroids. (It must be noted that other theories, such as the lysosome or so-called "suicide bag" theory, have been postulated, although it is quite likely that there are more similarities than differences among the various theoretical models.)

The inflammatory wave of destruction

In this investigation an injurious injection of gelatin is used to set off an inflammatory reaction in living mouse tissue. What follows is a wave of destructive cellular activity that comprises the inflammatory response to injury. Mast cells (which contain heparin, serotonin and histamine) take up water, swell and rupture, releasing their contents, which are toxic outside the mast cell wall. These toxins, in turn, cause disintegration of other cells (such as fibroblasts) and the release of additional toxic material. Capillaries, too, take up water and leak unformed blood elements, causing edema. And polymorphonuclears, lymphocytes and perithelial cells invade the inflamed site. As a result of all these changes, the cellular environment reaches a state of turmoil.



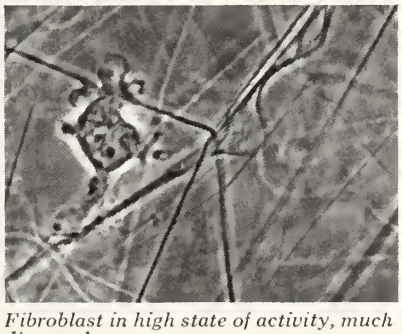
Phase-contrast microscopy showing mast cell before injury.



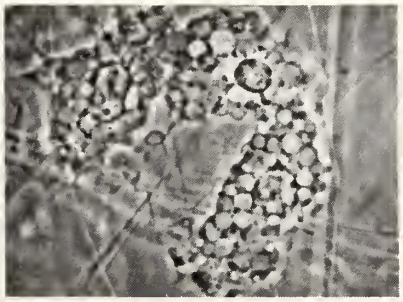
Mast cell (after injury) has broken up and released cytotoxins.

How corticosteroids change the picture

Corticosteroids appear to virtually stop the abnormal cellular activity that constitutes the inflammatory reaction. This permits the body's natural resources to clear up the inflamed area and repair the damaged tissue. This interpretation is supported by the fact that when the injurious gelatin solution is injected simultaneously with a corticosteroid —Synalar (fluocinolone acetonide)— the inflammatory pattern simply does not develop.



Fibroblast in high state of activity, much distorted.



Mast cells showing effects of corticosteroid action: cells are normal in size, shape and activity.



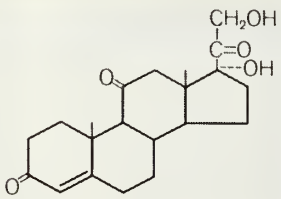
In summarizing his study Doctor Dougherty states: "...we also feel this work may explain why one corticosteroid helps a patient more rapidly and effectively than another. If it does, it is because one corticosteroid is the fastest, most effective inhibitor of the series of inflammatory events at the tissue level."

A New View of Corticosteroid Action in Inflammatory Dermatoses, a film based on this study, is now available from your Syntex representative.

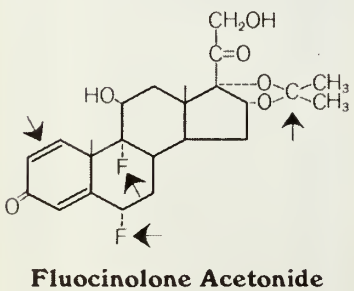
See last page for contraindications, precautions, side effects and dosage.

How advances in chemical design have achieved greater steroid potency

The chemical modification of corticosteroid molecules from the advent of hydrocortisone to the development of Synalar (fluocinolone acetonide) is a prime example of how biochemists can "design" to increase therapeutic activity and minimize undesirable side actions. Below, for example, we see the important changes that were made in reference to the hydrocortisone molecule to produce fluocinolone acetonide, one of the most active of all topical corticosteroids. As a result, a 0.01% preparation of Synalar (fluocinolone acetonide) has been reported to do the work of a 1% hydrocortisone product containing 100 times more cortiscosteroid. And it can often do it more effectively.



Hydrocortisone

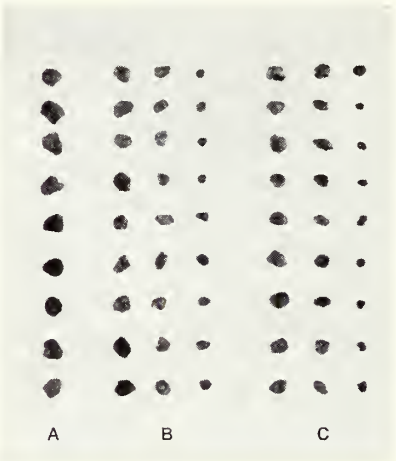


Fluocinolone Acetonide (Synalar)

- *a double bond between carbons 1 and 2*
- *fluorine substitutions at* both *the 6-α, and the 9-α positions*
- *the addition of the acetonide at the 16-α, 17-α positions, thus providing one of the most potent topical corticosteroids available.*

How bioassay tests are used to "predict" therapeutic potential

Biologic assays are another tool used by researchers to help establish the relative activity of corticosteroids. To date no single method of assaying corticosteroid activity has emerged as the ideal "yardstick" for predicting therapeutic potential. Taken together, however, these methods have proved useful. When such tests are run on various corticosteroids, a definite order of corticosteroid activity becomes evident. Compounds with the highest order of activity may be expected to merit clinical trial to establish their high therapeutic potential. When assayed by these methods, fluocinolone acetonide (Synalar) emerges as one of the most active topical corticosteroids, milligram for milligram, available for clinical application today.



THE THYMUS INVOLUTION ASSAY[1-4] is run on adrenalectomized rats. The sizes of the glands are measured, and the degree of involution caused by the steroid is determined as an indication of its potency. In the above photo, the comparative involution of thymus glands achieved with hydrocortisone and Synalar (fluocinolone acetonide) is shown. Untreated controls (A) show normal size. Group B – injected with 1, 2 and 4 mg. of hydrocortisone – show progressively smaller thymuses as does Group C – injected with fluocinolone acetonide – but with only 1/500th the dose of hydrocortisone.



THE ANTIGRANULOMA ASSAY[1-4] also utilizes adrenalectomized rats. Granulomas are induced by subcutaneous implantation of cotton pellets on either side of the thorax. The degree of granuloma inhibition achieved by a steroid reflects its potency. The above photo shows the inhibition of granuloma formation achieved with hydrocortisone and Synalar (fluocinolone acetonide). Untreated controls (A) show large, red granulomas adhering to the pellets. Group B, receiving hydrocortisone and Group C, receiving fluocinolone acetonide, show little, if any, granuloma formation. Fluocinolone acetonide produced the same effect as hydrocortisone with only 1/500th the dose. This assay, as well as the thymus involution assay, measures systemic rather than topical corticosteroid activity. Nevertheless, results by these methods correlate well with other assays and with the milligram potencies of topical steroids in current clinical use.

Worldwide clinical experience confirms the predictable therapeutic potential of Synalar

It is particularly gratifying that the promise of the advanced chemical design and high order of bioassay activity of Synalar (fluocinolone acetonide) has been confirmed by widespread therapeutic application. Indeed, the impressive clinical response rate of Synalar has been documented in no fewer than 232 papers from 22 countries.

Representative Clinical Results with Synalar*

Efficacy Documented in over 4,000 Patients

Condition	Number of Publications	Number of Patients	Significant Improvement†
Contact Dermatitis	27	750	713
Eczematous Dermatitis	21	472	409
Seborrheic Dermatitis	18	442	426
Atopic Dermatitis	24	460	426
Psoriasis	36	1,699	1,510
Neurodermatitis	18	351	324
Total	144	4,174	3,808

*Complete bibliography on request.

†Expressed by the authors as excellent, very good, good, complete remission of inflammation, etc.

PRESCRIBING INFORMATION

For initiation of therapy: Cream 0.025%, 5 and 15 Gm. tubes, 425 Gm. jars; *for emollient effect:* Ointment 0.025%, 15 Gm. tubes; *for maintenance therapy:* Cream 0.01%, 15 and 45 Gm. tubes, 120 Gm. jars; *for intertriginous or hairy sites:* Solution 0.01%, 20 cc. and 60 cc. plastic squeeze bottles; *for infected inflammatory dermatoses:* Neo-Synalar® Cream (0.025% fluocinolone acetonide, neomycin sulfate, equivalent to 0.35% neomycin base), 5 and 15 Gm. tubes.

CONTRAINDICATIONS: Tuberculous, fungal, and most viral lesions of the skin, (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of the components. PRECAUTIONS: Synalar preparations are virtually nonsensitizing and nonirritating. However, the solution may produce burning or stinging when applied to denuded or fissured areas. In some patients with dry lesions, the solution may increase dryness, scaling or itching. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. Prolonged use of any antibiotic may result in overgrowth of nonsusceptible organisms; if this occurs, appropriate therapy should be instituted. When severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. SIDE EFFECTS: Side effects are not ordinarily encountered with topically applied corticosteroids. As with all drugs, however, a few patients may react unfavorably to Synalar under certain conditions. The neomycin in Neo-Synalar Cream rarely produces allergic reactions.

REFERENCES: 1. Lerner, L. J., Bianchi, A., Turkheimer, A. R., Singer, F. M., and Borman, A.: Anti-inflammatory steroids: potency, duration and modification of activities. Ann NY Acad Sci 116:1071 (Aug. 27) 1964. 2. Idem: Comparison of anti-granuloma, thymolytic and glucocorticoid activities of anti-inflammatory steroids. Proc Soc Exp Biol Med 116:385 (June) 1964. 3. Ringler, A.: Activities of adrenocorticosteroids in experimental animals and man, in Dorfman, R. I.: Methods of hormone research, New York, Academic Press, 1964. vol. III. pp. 234-280. 4. Gubersky, V. R.: To be published.

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TABLETS

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Precautions: Keep out of reach of children. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use of meprobamate may result in dependence or habituation in susceptible persons—as ex-addicts, alcoholics, severe psychoneurotics. Withdraw gradually after prolonged high dosage to avoid possibly severe withdrawal reactions including epileptiform seizures. Warn patients of possible reduced alcohol tolerance. If drowsiness, ataxia or visual disturbances occur, reduce dose. If symptoms persist, caution patients against operating machinery or driving. Give cautiously to patients with suicidal tendencies. Treat attempted suicide with immediate gastric lavage and appropriate supportive therapy

Side Effects: Ethoheptazine and aspirin may occasionally cause nausea, vomiting, epigastric distress, and rarely dizziness and CNS depression. Overdosage may result in salicylate intoxication. Meprobamate rarely causes allergic or idiosyncratic reactions. These reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Mild reactions are characterized by urticarial or erythematous maculopapular rash. Acute nonthrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever have been reported. Meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioedema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. A few cases of leukopenia, usually transient, have been reported following prolonged dosage. Rarely, cases of aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis, and hemolytic anemia have been reported; almost always, in the presence of known toxic agents.

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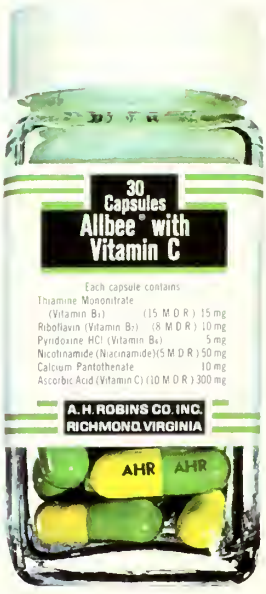
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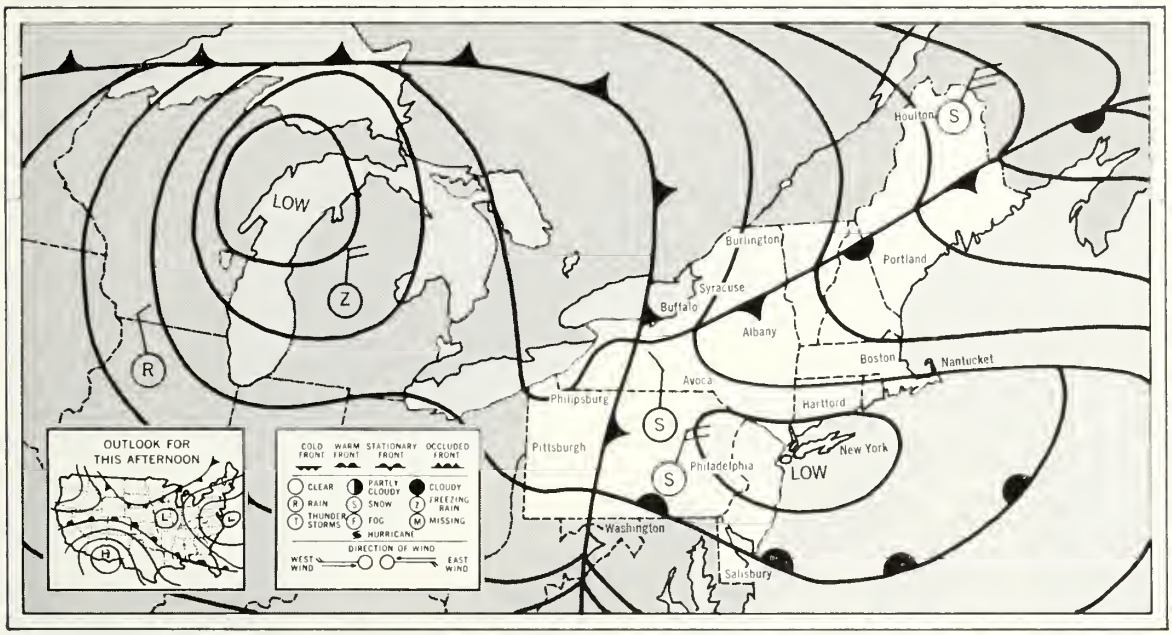
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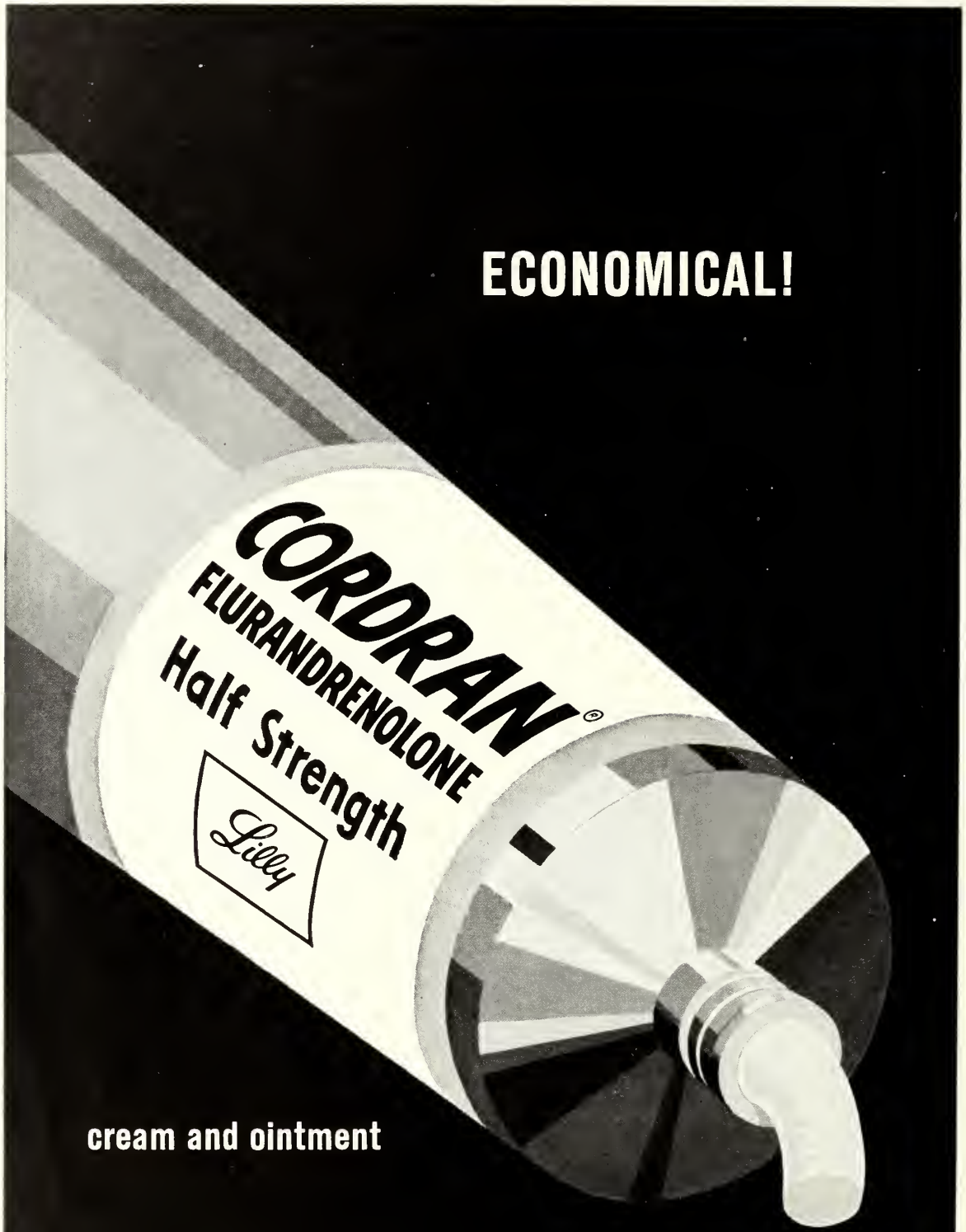
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Symposium on Nuclear Medicine

Clark F. Miller, M.D.*

Introduction

In that ragged landscape of time that may some day become known as the Early Atomic Age there are two volcanic landmarks half a century apart. They are the dates on which men first learned to use the treacherous energy of the atom for two opposing purposes. In 1895 it became in their hands a weapon against disease and death; fifty years later they turned it against themselves.

While all scientists of perception recoil from the unnerving image of 1945, many work today with such furious intensity to turn this event back to the ways of healing that one almost feels they are seeking to make amends to mankind. Physicians and physicists, representing a rather mixed cross section of their own specialties, have teamed up so effectively that nuclear medicine is today one of the youngest and fastest growing scientific fields.

Progress from laboratory to clinical research center to community hospital has occurred with such breath-taking speed that the field is strewn with also-rans. Those already up front or abreast are racing into a fog bank of undeterminable depth and density while the harassed engineers strive to clear the electronic track ahead of the ever more demanding medical profession.

Symposia and special courses in nuclear medicine draw physicians, technicians, pharmacologists, biochemists and many others in mixed crowds of gathering size and widening scope from all the states and from numerous foreign countries. One senses that these meetings differ from those medical gatherings attended in years gone by. Comparisons and contrasts spring to mind: greater informality, more give-and-take, a deeper oneness between the speakers and their audiences, a new excitement and enthusiasm. Then, as one looks around, one realizes with a shock that there are but few gray or balding heads among the un-shuffling listeners; the man who wields his pointer with such authority on the platform cannot be more than thirty-five. This, then, is the art and science of the young; they are building their own edifice, sharing their hopes and uncertainties, depending no longer on the tired dogmas of white-haired professors.

In this hospital we find ourselves now groping and stumbling with the rest. We tend to magnify our triumphs and disappointments, unashamedly, as any healthy children seeking balance and perspective in a sudden new world. Sometimes we are forced to unlearn old ways faster than we can grasp the new ones.

The diversity of arrangements whereby hospitals of our size have sought to work a radioisotope department into their tables of organization is a thrice-told tale. There are probably no two institutions free of government control in our nation that have found exactly comparable solutions. This should not be surprising, in view of the well-acknowledged complexities of the "troika" type of responsibility-sharing accepted today by most hospital boards, administrations, and medical staffs. The important thing, of course, is to find the solution that works best for each particular hospital. This introduces many problems, not the least of which is closing the credibility gap – if I may use a term of current coinage – that always seems to exist at first between many referring doctors and their colleagues who run the radioisotope unit in the hospital.

We feel, in our local situation, that we've been fortunate in finding as workable a solution as we have, for it has been rather daringly based on a theoretically ideal pattern. It has brought together the special skills of the internist, the pathologist, and the radiologist. The promise that nuclear medicine holds for the future depends on the degree of harmony in which these three specialties can continue to work together.

*Chief, Department of Radiology, Central Maine General Hospital, Lewiston, Maine 04240.

46 Madison Street, Auburn, Maine 04210

Brain Scanning

JOHN W. CARRIER, M.D.*

With the exception of thyroid studies the brain scan is probably the most frequently used isotope procedure in the General Hospital today. In many institutions it may be called for even more often than thyroid uptake and scanning studies.

The explanation of this is rather simple since the brain scan is an accurate, easily performed procedure with essentially no risk to the patient and no associated morbidity. The only discomfort associated with this examination is the immobilization required during the scanning.

Since the Isotope Section at the Central Maine General Hospital began operation about two years ago, 62 brain scans have been performed on 59 patients. Selection of candidates for scanning is as a rule made by the Staff Physicians, but the procedure is not performed on a routine basis. Personal consultation with the isotope section is required to assure that indications for the study are sufficient and when indicated neurosurgical consultation is requested. As a rule an electroencephalogram and skull x-ray studies are performed prior to any brain scan.

Although several isotopes are available for use in brain scanning, Mercury is today the most commonly used material either as Hg-203 or Hg-197. The latter has the advantage of a short half-life and therefore results in less radiation to the patient. For this reason this is the isotope of choice in children or when repeat scans are to be performed. As a rule we use Hg-203 in adults because of its higher energy gamma ray which makes detection easier and because of its longer shelf life which permits continuous availability.

Of the 62 brain scans performed, 11 were interpreted as being abnormal and pathology was confirmed in all but one of these. Eight patients were found to have neoplastic lesions, all primary brain tumors. No metastatic brain tumors have been demonstrated. The tumor types are listed in Table 1.

The lesion in one of these patients was not detected on the initial scan though it was seen on a repeat scan two weeks later. In retrospect the lesion was faintly visible on the initial scan and because of this occurrence it has become our practice to obtain three views on all scans when possible if pathology is not detected on the initial two views.

TABLE 1

	No. of Patients
Glioblastoma Multiforme	5
Ependymoma	1
Astrocytoma	2

One of the abnormal scans showed an area of increased activity which was believed to be caused by encephalomalacia secondary to a thrombosis of the left internal carotid artery at the bifurcation as demonstrated by angiography.

One patient with a history of trauma, two months prior to the study was found to have definite increased activity in the left temporoparietal area peripherally and angiography demonstrated a subdural hematoma which was evacuated.

In one patient recently an area of increased activity has been demonstrated on two separate scans one month apart but angiography and pneumoencephalography have failed to demonstrate a lesion. This patient is known to have a demyelinating disease similar to Multiple Sclerosis but correlation between this disease and the abnormal scan is lacking.

Six of the 62 scans performed have been judged unsatisfactory for definitive evaluation either at the time of the procedure or in retrospect. Most of these unsatisfactory scans were so labeled because of technical difficulties and as expected occurred early in our experience. These can be attributed to lack of familiarity with the equipment. Two of the scans were not entirely satisfactory because the time interval between injection of the isotope and scanning was not long enough to permit reduction of background radiation to a satisfactory level. We now wait a minimum of three hours after injection before scanning is begun.

Brain scanning promises to increase in importance as a diagnostic isotopic procedure with the development of more suitable isotopes such as Technetium-99 and more advanced equipment as the Gamma camera and Autofluoroscope which reduce scanning time to a fraction of the present time.

As more procedures are carried out, refinements in technique can be expected with provision of further information to the clinician.

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Liver Scanning

JOSEPH A. LEONARDI, M.D.*

There are several organic agents which are selectively concentrated and excreted by the liver parenchymal cells. These can be tagged with radioiodine and the pattern of radioactivity mapped by use of external scanning techniques. The agents in use are rose bengal and Cholografin I-131. Colloid particles of radioactive gold and technetium can also be used to demonstrate the liver reticuloendothelial system.

The agents most in use today in community hospitals are rose bengal and (Au-198) radioactive colloidal gold. The former is more commonly used because of its longer shelf life, permitting easier storage. Au-198 would be more adaptable to an institution with a larger volume than normally handled in a community hospital.

Liver scanning is simple, harmless to the patient, free of side-effects, and requires minimal time. It can be performed either as an out-patient or in-patient procedure. The diagnostic value has been proven to be comparable, in certain situations, to laparotomy, and superior to liver function tests. As for the radiation dose to the patient, it is less than that of many a routine radiographic study.

Of the two agents commonly used for liver scanning, radioactive colloidal gold Au-198, is picked up by the reticuloendothelial cells of the body, particularly of the liver. Anatomical detail and liver outline are superior to that obtained when rose bengal is used since there is no activity in the gallbladder, small intestines, or in the left kidney, which may cause confusion when rose bengal is used.

The second agent, rose bengal I-131, is removed from the circulating blood by the polygonal cells of the liver and excreted through the biliary tree into the small intestines. The mode of excretion is important, for if there is complete biliary obstruction the isotope will not reach the intestines, and may be eliminated in part by the kidneys. Therefore, rose bengal studies are valuable in determining liver function, and in the differential diagnosis of jaundice.

Rose bengal also gives a good anatomical picture of the liver, but as mentioned above, the liver detail is superior when colloid Au-198 is used.

Dosage and Technic

The dosage of 2uc per kg body weight is the recommended dose of rose bengal or colloid Au-198. This is administered intravenously, and the scan started in about twenty minutes.

The patient is placed supine, and an anteroposterior scan is performed, with lateral study if indicated. When colloidal Au-198 is used, the scan should extend sufficiently to the left to include the spleen, and is performed two hours after injection.

The indications for liver scanning are multiple, and may aid in the determination of the following:

1. Size, shape and location of the liver.
2. Liver function.
3. Displacement by adjacent organs.
4. Best biopsy site.
5. Determine presence of tumor (primary or metastatic).

Interpretation

In the interpretation of the liver scan, one first evaluates the general configuration and the uniformity of the radioactivity. The relationship of the liver to normal anatomical landmarks, such as the xiphoid process and the costal margins, should also be evaluated.

The different patterns of radioactivity have been illustrated and described in numerous medical journals in the past few years. One might summarize patterns as follows:

a. Tumors, both benign and malignant, appear as areas of non-uptake.

b. Cirrhotic livers show irregular uptake. There may also be nodular defects at times.

c. Biliary tract obstruction is revealed by lack of uptake in the intestinal tract on the 1-hour or 24-hour scan when I-131 is used.

In addition to the above, liver scanning is helpful in cases of traumatic injuries and in extrahepatic conditions including subdiaphragmatic abscesses and extrahepatic biliary tract obstruction.

This examination can also be done on children. Ackerman and McFee (U. Minn.) (S.G. & O 117, 41, 1963) have used it on children as young as three months. The dose was 1.5-2uc/kg and the scan started at 20-30 minutes after the injection. They have concluded that hepatic scanning can be successfully performed in children of all ages.

In conclusion, it is apparent that hepatic scanning serves to aid in the differential diagnosis of liver pathology. This procedure has proven useful in the community hospital, and is being performed with increasing frequency because of its accuracy and the ease with which the information is obtained.

References

1. Shehadi, William H.: Practical Application of Liver Scanning. Radiology Vol. 86, No. 4, April 1966, pp. 726-733.
2. Quinn, J. L.: Liver Scanning. Scanning in Clinical Medicine, 1964, pp 178-82.
3. Izenstark, J. L.: Refresher Course in Practical Organ Scanning of the Abdomen, presented at Annual Meeting of Radiological Society of No. America, Nov., 1966.
4. Tabern, Donalee L.: Liver Scanning, Radioisotope Scanning, Picker Scintillator, Vol. VIII, No. 4, August, 1964.

*Assistant Radiologist, Central Maine General Hospital, Lewiston, Maine 04240.

Isotope Fluid and Function Studies:

Practical Considerations

RONALD S. POTTS, M.D., C.M.*

The T3 Uptake: This procedure is an indirect in vitro serum determination of the thyro-binding globulins unbound by thyroid hormones. Using the resin-sponge technique, it has been technically satisfactory with easy control of environmental variables.

Since the test does not measure iodine, it is not subject to iodine contamination in any form. It is a measure of the thyroid gland's output and hence yields information similar to the PBI. Often it is the only chemical evaluation of thyroid activity easily available when a patient is iodine contaminated.

This is an excellent screening procedure and has proven popular. As a treatment guide, the patient can be titrated down to a normal test range with antithyroid therapy; or titrated up to a normal range with thyroid preparations. The test change often precedes the clinical response.

Diseases and drugs which affect serum protein fractions do affect the T3 uptake, as they do the PBI. Steroids markedly depress the test result, often for several months after cessation of steroid therapy. Even the endogenous steroid levels during the second half of the menstrual cycle may lower the test result by 1-2% into the hypothyroid range. This is corrected by properly timed serum collection.

It is very useful in evaluating suspected hyperthyroidism during pregnancy or steroid therapy. If the pregnancy is viable and the T3 uptake is not markedly depressed by the high steroid environment, hyperthyroidism can be documented. A chemically valid PBI in the same situation would be falsely elevated just by the pregnancy.

Serum collection and preservation are easily done. Twelve tests can be done at the same time. There is negligible radiation exposure to the analyst and proper cost control makes this procedure economical.

Blood Volume Studies: Technically, this has become a practical determination, particularly when using radioiodinated human albumin. Despite the theoretical advantages in having estimates of total blood and plasma volumes together with total body hematocrit, this study has not been well-received. Two meticulous venipunctures are required, sometimes three, and can be troublesome in pediatrics and geriatrics. There is no single valid criterion against which to compute normal value ranges. Since normal blood volumes have not previously really been known, it is difficult for clinicians to accept some volume results even when the analyst is satisfied with the determination. It is also certainly true that occasionally for no apparent reason, results are obtained which are not compatible with the clinical situation.

No laboratory procedure is infallible and blood volume studies can be helpful in three situations: evaluating the treatment needs in arrested acute blood loss, evaluating chronic anemias as to the degree of "compensating" hypovolemia, and evaluating elevated peripheral hematocrit values. Outpatients are easily accommodated and patient radiation exposure is less than from common x-ray procedures.

The Schilling Test: This procedure evaluates ability to absorb a known oral dose of radioactive vitamin B12, with subsequent excretion and recovery of the absorbed dose in the urine. A large dose of unlabelled vitamin B12 is given parenterally to block liver uptake of the radioactive B12. The test can be repeated in five days with added oral intrinsic factor.

A complete and actual 24-hour urine volume is required since quantitative recovery of the radioactive vitamin is attempted. This is difficult with females and uncooperative patients. Renal insufficiency will hinder excretion. The necessary blocking dose of parenteral vitamin B12 may be hematologically undesirable. The necessary delay before repeating the test for confirmation of apparent poor absorption postpones the diagnosis.

With good conditions, meaningful results are obtained with a minimum of patient discomfort. Cost may be a consideration. The long half-life of the isotope aids procedure availability, of importance since the number of candidates is small.

The Vitamin B12 Absorption Test: The theory of the Schilling test is good but the procedure is necessarily clumsy and the other disadvantages have previously been mentioned.

It is possible to gain an impression of how much radioactive vitamin B12 has been absorbed, both with and without added intrinsic factor, by determining the rate of radioactivity in the blood 8-10 hours after taking the dose. Ranges of activity correlating with normal and impaired absorption have been formulated.[1,2] The test can be repeated in 2-3 days and none of the Schilling test technical disadvantages are encountered.

This procedure has given similar information to the Schilling test when done on the same patients, correlated with other information and therapeutic response. If bone marrow and gastric juice analyses are to be avoided, the B12 absorption test is certainly preferable to the Schilling test.

The Hepatogram: This procedure was developed out

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of interest for a screening test of liver function. The clearance of radioactive rose bengal from the blood by the liver and subsequent excretion into the biliary tract and small bowel has been utilized as a test of bile duct patency.[3] The 1-2 hours of required monitoring is clumsy and it was desirable to concentrate just on liver function. The available twin probe system was stimulation to develop such a procedure.

The normal clearance rate of radioactive rose bengal from the blood by the liver is documented.[4] It remained to determine the corresponding normal liver uptake of the same dye dose. This was done in known normal persons and tested in persons with known liver disease with gratifying results.

The procedure consists of injecting intravenously a known small dose of radioactive rose bengal. The clearance of dye from the blood is determined by recording the change in radioactivity over the heart, while simultaneously recording the increase of radioactivity over the liver as a measure of liver uptake. It thus consists of two tests, each dependent on the other and serving as a check on each other.

The procedure takes 30 minutes, radiation exposure and patient discomfort are minimal, it has proven reliable, is technically more satisfactory than the BSP excretion test, and is well-suited to outpatients.

References

1. "Intestinal Absorption of Co^{57}-B12; Serum Counting", Ann Int Med, 62:97-102, Jan 1965.
2. "Cobalt-57 Labelled Vitamin B12 Plasma Levels for the Differential Diagnosis of Macrocytic Anemias", J. of Nuc. Med., Vol 7, pp 583, Aug 1966.
3. Abbott Radio-Pharmaceuticals Booklet 01-3347/R3-10-Jan 1965.
4. Ibid.

Guest Editor – Waldo A. Clapp, M.D. Reports on Postgraduate Education at Central Maine General Hospital, Lewiston

Since October, 1955, the Central Maine General Hospital has been sponsoring refresher courses in various aspects of medicine as its part of continuing postgraduate medical education for practicing physicians in Maine.

Refresher courses by such well-known physicians as Drs. Weinstein, Dameshek, Kiefer, and Diamond have been offered. A very popular course in X-Ray Diagnosis in General Medicine was given in 1958 by Dr. Clark Miller, chief of CMG's own department of radiology, and it is planned to repeat a course next year with added lecturers on the use of radioisotopes in diagnosis.

The program for the latest in the CMGH series of postgraduate refresher courses for continuing education is published elsewhere in this issue of the Journal.

Radioisotopes in Diagnosis and Treatment of Thyroid Disease

CHARLES A. HANNIGAN, M.D.*

The thyroid because of its affinity for iodine and because of the availability of an extremely versatile iodine isotope has been the most extensively studied and treated organ in the field of nuclear medicine. I-131 has a half-life of approximately eight days and emits both gamma and beta rays. Its gamma rays, which have high energy and relatively long range, enabled us to study the thyroid uptake and concentration of radioiodine with early less sensitive counting systems. The beta ray is the principle I-131 emission which is utilized for treatment. It delivers a large amount of radiation in thyroid tissue and because its range is only a few millimeters in tissue does not produce any significant amount of harmful radiation to surrounding tissues such as skin, blood vessels and trachea.

The thyroid uptake of I-131 is increased in hyperthyroidism and decreased in hypothyroidism. The test involves giving the patient a capsule of approximately 25 microcuries of I-131 to swallow and then in 24 hours counting the radioactivity in his thyroid gland as compared to the radioactivity in a capsule identical to the one swallowed. If there is no radioactivity found in the neck, the uptake would be 0%. If the amounts of radioactivity in the neck and the capsule are identical, the uptake would be 100%.

For all practical purposes, this does not occur since there is bound to be some I-131 which in 24 hours is not in the thyroid gland. This iodide has been excreted or is in other body tissue. However, the thyroid gland in diffuse thyroid hyperplasia and thyrotoxicosis may well take up 75% to 80% of the I-131 as compared to the standard or identical capsule in 24 hours. The patient with low thyroid function will take up perhaps from 0% to 15% and this would reinforce a clinical impression of hypothyroidism. In our laboratory we consider the usual normal uptake to range between 15% and 45%.

However, there are circumstances other than hypothyroidism which will decrease the I-131 uptake. Notably, these occur following iodine intake from iodine containing medications such as thyroid hormones, vitamins, cough syrups and the various iodine containing x-ray contrast materials. Conversely, there are circumstances other than hyperthyroidism which will increase the I-131 uptake. These include pregnancy, congestive heart failure, nephrosis, cirrhosis and iodine deficient goiters.

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Scan #1

It is therefore important to be aware of the effect of drugs and other clinical conditions on the I-131 uptake. Although the clinical history and examination are important in evaluating the radioiodine uptake in thyroid diseases, particularly important is a detailed history of previous iodine containing drugs or contrast material or other drugs or situations which will influence I-131 uptake.

These pitfalls are not any different from those encountered in other tests of thyroid function which are subject to influence by conditions other than hypo- or hyperthyroidism. The determination of the uptake of radioiodine in the thyroid gland by our present system of instrumentation is reliable but it is up to the clinician to decide what other circumstances may have influenced the uptake of radioiodine before he determines just how valid a test the radioiodine uptake is in making the diagnosis of hypo or hyperthyroidism in a particular clinical situation. A good review of the factors influencing the radioiodine uptake and other thyroid tests



Scan #2

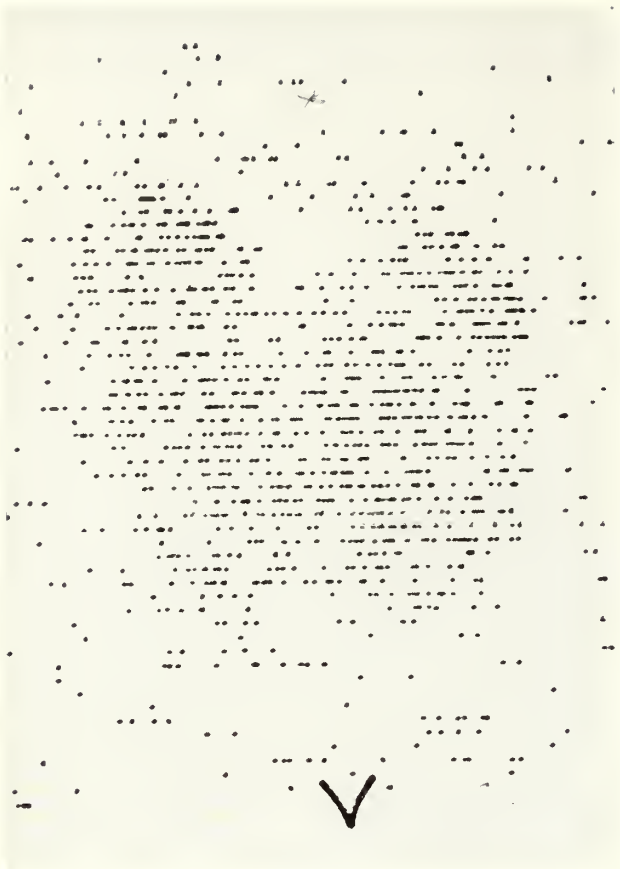
has been given by Sisson in the Journal of Nuclear Medicine.**

Before the development of today's very sophisticated scanning systems, we used to try to locate areas of increased uptake of I-131 by manually passing a probe over mediastinum, bone or certain nodular areas of the thyroid. Increased areas of radioactivity indicated functional thyroid tissue. In this manner, very roughly, we could determine the presence of a substernal thyroid or metastases to bone of functionally active thyroid carcinoma; also, if certain areas of the enlarged thyroid were "cold" and more likely to be malignant.

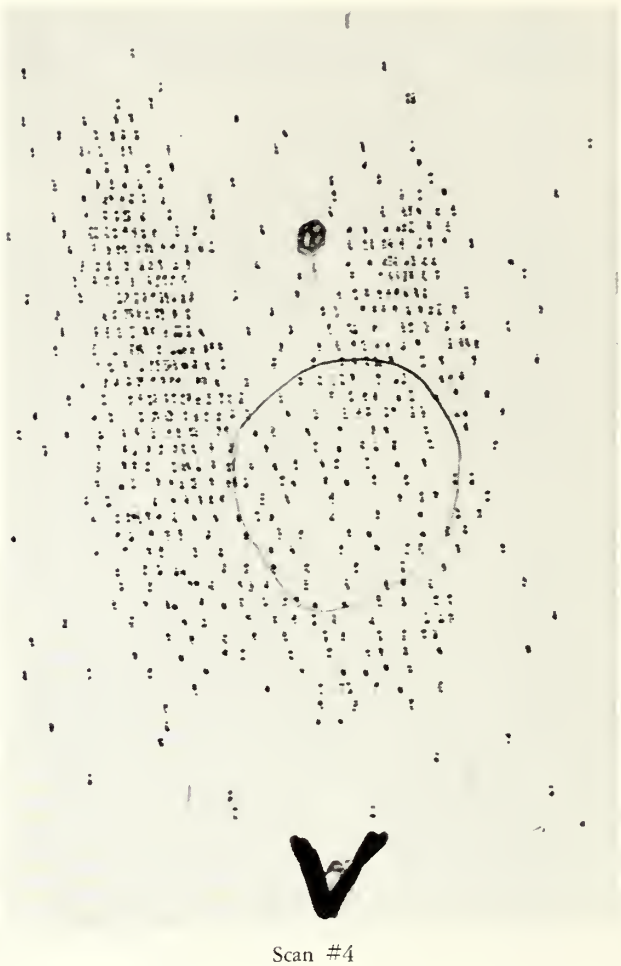
The scanner which moves a probe, continuously recording radioactivity, back and forth over the thyroid or over any part of the body in a line and then repeats this at a set distance again and again, does automatically the same thing we used to do by hand but in a predictable and recordable manner. In this way, we can map out body organs which concentrate a suitable isotope and the thyroid gland was the first organ to be extensively scanned in this manner. If there remains sufficient concentration of radioactivity, the thyroid scan can often be done at the same time as the 24-hour I-131 uptake. By this means, information can be obtained about the thyroid gland relative to its location, size and configuration.

The six scans presented will illustrate pertinent points regarding the information that can be obtained from

**Sisson, J.C.: Principles of, and Pitfalls in, Thyroid Function Tests: Journal of Nuclear Medicine, Volume 6, pages 853-901, 1965.



Scan #3



Scan #4

thyroid scanning. The lower midline mark on each scan coincides with the suprasternal notch which appears low because the patient lies supine with the neck extended during scanning.

Scans #1 and #2 were done on the same patient. Scan #2 shows the diffuse thyroid enlargement and uniform radioactivity consistent with Grave's Disease or diffuse thyroid hyperplasia. This patient's radioiodine uptake was 75% in 24 hours. Scan #1, which we consider to be normal in position, size and configuration, was done four months after #2. In the meantime, this patient had been successfully treated with I-131.

Scan #3 shows the moth-eaten enlarged thyroid in diffuse colloid goiter.

Scan #4 shows the appearance of a "cold" nodule on thyroid scan where there is very little uptake of radioactivity in the nodule compared with the rest of the thyroid. This might well be the picture of thyroid cancer, since we consider that the less uptake of I-131 or function a nodule has the greater the possibility of malignancy.

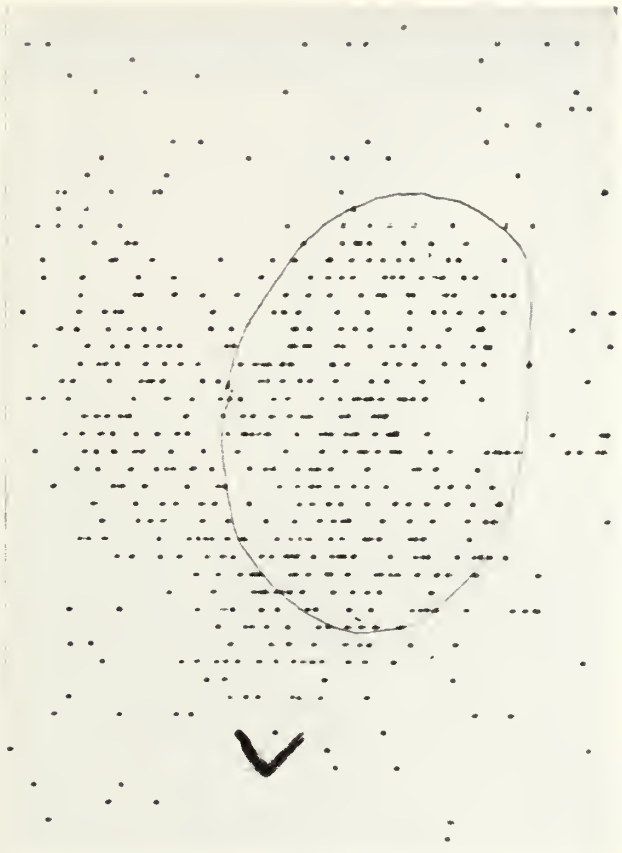
Scan #5 shows a large nodule with a fair amount of radioactivity which would be considered a "warm" nodule and therefore less likely to be malignant than the nodule in scan #4.

Scan #6 shows a "hot" nodule which is almost never malignant. The characteristic picture here besides the nodule is the lack of any other visible thyroid tissue. This patient was seven months pregnant at the time with a large thyroid nodule and a clinical picture of hypermetabolism which could have been either from pregnancy or thyrotoxicosis. Her PBI was high as might have been expected in pregnancy. Her radioiodine uptake was in a normal range. However, the scan in this clinical situation offered convincing proof that she did have a toxic thyroid nodule. The T-3 uptake in a normal range during viable pregnancy also supported a diagnosis of hyperthyroidism.

Scanning in areas where thyroid tissue is not normally present can demonstrate ectopic thyroid tissue and thereby be of value in clarifying the nature of masses at the base of the tongue or in the mediastinum. Also, the presence or absence of any other thyroid tissue in its normal location or anywhere along the trachea would be important in managing the lingual thyroid.

These then are some of the contributions of thyroid scanning. It can give not only an accurate picture of thyroid size, location and configuration, but can also give an accurate picture of the functional activity of thyroid nodules and thereby offer the physician information of value in the management of these nodules.

At this time it has been estimated that over 200,000



Scan #5



Scan #6

people in this country have been treated with I-131 for thyrotoxicosis. These represent patients with diffuse thyroid hyperplasia and toxic nodular thyroids who vary in age from young adulthood to extreme old age. The only significant complications so far have been hypothyroidism.

At the present at Central Maine General Hospital, unless there are special circumstances, we limit the use of I-131 to patients of 40 years of age or older. The dose of I-131 is determined on the basis of the size of the gland, the I-131 uptake and certain characteristics of the clinical situation such as resistance to previous treatment, nodularity of the gland and the duration of toxicity. The beta rays of the I-131 deliver radiation at a cellular level which affect cell multiplication. The main problem is the need for giving a dose which will control hyperthyroidism and not result in hypothyroidism. It is easy to destroy thyroid function with a large dose of I-131 and recent experiences suggest that a smaller initial dose followed by other doses if necessary may result in a lesser incidence of hypothyroidism.

Also, the thyroid gland can be destroyed in the euthyroid patient in disease states such as intractable angina, congestive heart failure or emphysema where lowering of the metabolic rate may be helpful. This is of course a last resort measure and all other forms of suitable treatment should first be evaluated.

Another occasionally useful treatment with I-131 is in the control of metastatic thyroid cancer. This is again based on the assumption that indicated surgery and radiation therapy have failed. In this situation, remaining normal thyroid tissue is completely ablated either by surgery or by I-131; then the patient's metastatic cancer is stimulated by Thyrotropin to become functionally active so that it will pick up sufficiently large amounts of I-131 to deliver lethal radiation to the cancer cells. Using these techniques there have been instances of worthwhile palliation.

P-32 is useful for the treatment of polycythemia vera. This is a beta emitter which is preferentially picked up by bone marrow cells so that the multiplication of these cells may be controlled. Other measures such as x-ray therapy, phlebotomy and Myleran® are also useful. Similarly, P-32 may be used to control chronic myelogenous leukemia. We are also using P-32 instilled into the affected body cavities for the control of effusions in malignant disease where Thio-Tepa or Nitrogen Mustard may not be used.

The outstanding therapeutic use of radioisotopes, however, still remains I-131 in the management of thyrotoxicosis.

Conclusion

The procedures mentioned in this and the preceding papers include those we use most frequently at the

Central Maine General Hospital. Other lesser used procedures include spleen, bone, kidney and lung scanning as well as renograms. We are awaiting with particular interest reliable procedures to demonstrate such hidden organs as the pancreas and parathyroids.

Although the contributions of Nuclear Medicine to the treatment of disease have fallen far short of expectations, its contributions to the diagnosis of disease have many times surpassed them.

85 Goff Street, Auburn, Maine 04210.

Marked Hypercalcemia in Multiple Myeloma*

Charles G. Zaroulis, M.D.,** Michael J. Harkins, M.D. and Stanley D. Rosenblatt, M.D.

Introduction

Multiple myeloma is a malignant neoplastic disease caused by the proliferation of abnormal plasma cells and is commonly associated with hypercalcemia.[1,2,3] This report describes a case of multiple myeloma complicated by severe hypercalcemia and a recent method of therapy directed against the osteoporosis and osteolytic lesions which appear in this disease.

Case Report

H.P.I.: This was the first Central Maine General Hospital admission for a 54-year-old white male truck driver who presented with a chief complaint of "loss of appetite, weakness, and pains in the legs." The patient was in ideal health until one month prior to admission when he developed malaise, anorexia, and progressive fatigue. Two weeks prior to admission he experienced severe deep pains in the legs which were not aggravated by activity, but which were progressive in intensity and incapacitating. He lost twelve pounds of weight. Patient denied fever, lymphadenopathy, skin lesions, edema, gastrointestinal symptoms except anorexia.

Past Medical History: No serious illnesses, operations or previous hospitalizations.

Family History: Denied any knowledge of malignancies or blood dyscrasias.

Physical Examination: A chronically ill middle-aged gentleman appearing older than his stated age. B/P 150/90, P-96 and regular, R-16/min., T-98.6(R). Skin showed a generalized dryness and diminution in turgor without any petechiae. Funduscopic examination revealed grade II arteriolosclerotic changes. The neck veins were flat with normal waves. There was not any lymphadenopathy. The chest had a normal percussion note but on auscultation fine resonant rales were scattered throughout both lung fields. The heart was of normal size with a regular rhythm and no murmurs or rubs were heard. His abdomen was soft and there was no hepatosplenomegaly, masses or hernias; the bowel sounds were normal. Tenderness was elicited with light palpation over tibiae. The remainder of the general and neurologic examinations were normal.

Admitting Diagnosis: Occult Malignancy.

Laboratory Data

Hemoglobin 14.5 gms.%, Hematocrit 40.5%, WBC 13,413, Differential 72-PMN's, 20-Lymphs, 3-Monos, 2 Basophils, and 3-Eosinophils; the platelets and RBC's appeared normal on the smear.

Urinalysis: s.g.-1.010, Tr. of albumin, no sugar or acetone, a rare coarsely granular cast/lf and 1-3 WBC's without any RBC's/hf.

Blood Protein: TP 7 gm%, Alb. 2.8 gm%, Glob. 4.2 gm% with spike in Beta Glob. of 2.1 gm%.

BUN 72.4 mg%.

FBS 88 mg% and 2-hour post prandial blood sugar 102 mg%.

VDRL negative.

EKG abnormal because of inverted T waves in III, AVF, and V_1.

Bone Marrow: Erythroid: myeloid ratio of 1:10. Approximately 38% of the cells are plasmacytic and clumped. Very rare megakaryocytes are seen. Impression: Multiple myeloma.

X-rays: Chest – Congestion in mid and lower lung fields. Legs – No evidence of bony pathology. Skull – Diffuse mottled radiolucent defects. Pelvis – Several radiolucent defects.

Hospital Course

The diagnosis of multiple myeloma was established by bone marrow examination and serum protein electrophoresis. During the hospitalization numerous urine specimens were analyzed for Bence Jones Protein but none was detected.

Once the diagnosis was firmly established additional laboratory tests were necessary to evaluate any of the known complications of multiple myeloma. Hypercalcemia with hypercalcinuria was confirmed after the clinical suspicion had been aroused by bone pain and osteolytic lesions by x-ray. Serum calcium was 14.6 mg% and rapidly rose to a high of 20.2 mg%, serum phosphate did not exceed 5.7 mg%, and serum alkaline phosphatase was 9.1 Bodansky units. Renal functional impairment frequently seen in this disease was evident by an elevated BUN.[37]

The patient received 4 mg. Melphalan (1-paraphenylalanine mustard, Alkeran®) and 60 mg. Prednisone daily.[34,35] The rising serum calcium necessitated increased dosages of Prednisone (as high as 200 mg. every other day) in an effort to reduce serum calcium. An alternate day schedule was employed in an attempt to avoid the side effects of high dose steroid therapy.[35] During periods of marked hypercalcemia intravenous infusions of isotonic fluids (3000-5000cc. per day) were given. Nonabsorbable phosphate materials (Maalox®) were used to bind calcium in the gut. Low calcium diet, and high doses of steroids were also necessary.

When serum calcium began to return to normal limits and clinical improvement was apparent, the patient was started on 150 mg. of Sodium Fluoride (50 mg. capsules three times a day with meals) in an effort to produce bone fluorosis.[32,33]

Bone pain disappeared and a subjective feeling of well-being

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developed. Objective evidence of improvement was manifested by a stabilized hemogram, normal serum calcium, return to normal renal function, and increased physical activity.

Discussion

Hypercalcemia can be a manifestation of many disease entities including hyperparathyroidism,[4] immobilization (particularly in Paget's disease),[5,6] milk-alkali syndrome,[7,8] neoplasms,[9,10,11,12] hypervitaminosis-D,[13,14] idiopathic,[15] secondary hyperplasia of the parathyroids in uremia,[16,17,18] hyperthyroidism,[19] Addison's disease, steroid withdrawal syndrome,[20,21,22] sarcoidosis,[23,24] Hodgkin's disease, Lymphoma,[12,25] leukemia (particularly in children),[26,27] and in multiple myeloma.[1,2,3]

Classically patients with multiple myeloma come to the physician because of "Bone Pain." Myeloma cells proliferate within the bone marrow of cancellous bones and destroy cortex which produces the bone pain and contributes to the hypercalcemia. The severity of the bone pain results in variable degrees of immobilization which in addition to renal impairment and bone destruction contributes to the hypercalcemia.[1,2,3,5,6,37] of multiple myeloma. All these factors are illustrated by this case report. The hypercalcemia, by its effects upon cell membranes, GFR, and water reabsorption may suddenly become the life-threatening factor in this disease. It demands intensive therapy. This includes large intravenous infusions of isotonic fluids, non-absorbable phosphate materials by mouth, low calcium intake, and high doses of steroids. The use of intravenous infusions of thyrocalcitonin, which is an extract of the thyroid and which reduces serum calcium,[29,30] and intravenous or oral inorganic phosphate[31] should be reserved for refractory cases of hypercalcemia.

High doses of sodium fluoride were administered to induce skeletal fluorosis in order to increase bone density and thereby avoid the pathological fractures arising from the osteolytic lesions of multiple myeloma.[32,33] It may be considered that accumulation of fluoride in cancellous bone may interfere with the metabolism of rapidly proliferating neoplastic cells. This should decrease their numbers and help to reduce the hypercalcemia.[33] Since this patient only received sodium fluoride for six weeks, no objective radiographic evidence of an alteration of the bone lesions can be presented. Usually 6-9 months of therapy is necessary before x-ray changes are noted.

"Preliminary data suggest that Melphalan combined with Prednisone is superior to Malphalan alone"[35] in producing a remission in this disease.

References

1. Gutman, A. B., Tyson, T. L. and Gutman, E. B. Serum Calcium, inorganic phosphorus, and phosphatase activity in hyperparathyroidism, Paget's disease, multiple myeloma and neoplastic disease of bones. Arch. Int. Med., 57: 379, 1936.
2. Stewart, A. and Weber, F. P. Myelomatosis. Quart. J. Med., 7: 211, 1938.
3. McGeown, M. G. and Montgomery, D. A. D. Multiple myelomatosis simulating hyperparathyroidism. Brit. M. J., 1: 86, 1956.
4. Albright, F. and Reifehstein, E. C., Jr. The Parathyroid Glands and Metabolic Bone Disease, pp. 81-98, Baltimore, Williams and Wilkins Co., 1948.
5. Albright, F., Burnett, C. H., Cope O. and Parson, W. Acute atrophy of bone (osteoporosis) simulating hyperparathyroidism. J. Clin. Endocrinol., 1: 711, 1941.
6. Reifenstein, E. C., Jr. and Albright, F. Paget's Disease. Its Pathologic Physiology and the Importance of this in Complications Arising from fracture and Immobilization. New England J. Med., 231: 343, 1944.
7. Burnett, C. H., Commons, R. R., Albright, F. and Howard, J. E. Hypercalcemia Without Hypercalcuria or Hypophosphatemia, Calcinosis and Renal Insufficiency. New England J. Med., 240: 787, 1949.
8. Wenger, J., Kirsner, J. B. and Palmer, W. L. The Milk-Alkali Syndrome. Hypercalcemia, Alkalosis, and Azotemia following Calcium Carbonate and Milk Therapy of Peptic Ulcer. Gastroenterology, 33: 745, 1957.
9. Myers, W. P. L. Hypercalcemia in neoplastic disease. Cancer, 9: 1135, 1956.
10. Baker, E. H. Abnormalities in calcium metabolism in malignancy; effects of hormone therapy. Am. J. Med., 21: 714, 1956.
11. Case Records of the Massachusetts General Hospital. Case 39061, New England J. Med., 248: 248, 1953.
12. Plimpton, C. H. and Gellhorn, A. Hypercalcemia in malignant disease without evidence of bone destruction. Am. J. Med., 21: 750, 1956.
13. Howard, J. E. and Myers, R. J. Intoxication with vitamin D. J. Clin. Endocrinol., 8: 895, 1948.
14. Hess, A. F. and Lewis, J. M. Clinical experience with irradiated ergosterol. JAMA, 91: 783, 1928.
15. Fanconi, G., Girardet, P., Schlesinger, B., Butler, N. and Black, J. Chronische Hypercalcämie, Kombiniert mit Osteosklerose, Hyperazotämie, Munderwucks, und kongenitalen Missbildungen. Helvet. paediat. acta, 7: 314, 1952.
16. Gilmour, J. R. The Parathyroid Glands and Skeleton in Renal Disease. London, Oxford University Press, 1947.
17. Bergstrand, H. Parathyroid Bodies and Bright's disease. Acta med. scan-dinav., 53: 644, 1921.
18. Pollak, V. E., Schneider, A. F., Freund, G. and Kark, R. M. Chronic Renal disease with secondary hyperparathyroidism. Arch. Int. Med., 102: 200, 1959.
19. Stanley, M. M. and Fazekas, J. Thyrotoxicosis simulating hyperparathyroidism. Am. J., ed., 7: 262, 1949.
20. Loeb, R. L. Chemical changes in the blood in Addison's disease. Science, 76: 420, 1932.
21. Leeksma, C. H. W., de Graeff, J. and deCock, J. Hypercalcemia in adrenal insufficiency. Acta med. scandinav., 156: 455, 1957.
22. Kepler, E. J., Sprague, R. G., Mason, H. L. and Powers, M. H. The pathologic physiology of adrenal cortical tumors and Cushing's Syndrome. Recent Prog. Hormone Res., 2: 345, 1948.
23. Harrell, G. T. and Fisher, S. Blood Chemical Changes in Boeck's Sarcoid with particular reference to protein, calcium and phosphate values. J. Clin. Invest., 18: 687, 1939.
24. Mather, G. Calcium metabolism and bone changes in sarcoidosis. Brit. M. J., 1: 248, 1957.
25. Myers, W. P. L. Clinical aspects and management of hypercalcemia. Med. Clin. North America, 40: 871, 1956.
26. Mawdsley, C. and Holman, R. J. Hypercalcemia in acute leukemia. Lancet, 1: 78, 1957.
27. Kalajian, B. J., Herbut, P. A. and Erf, L. A. The Bone changes of leukemia in children. Radiology, 47: 223, 1946.
28. Moloney, W. C. and Hogan, J. A. The management of Multiple Myeloma. Med. Clin. North America, 46: 1379, 1962.
29. Copp, D. H., Cameron, E. C., Cheney, B. A., Davidson, A. G. F. and Henze, K. G. Endocrinology, 70: 638, 1962.
30. Foster, G. V., MacIntyre, I., Joplin, G. F., Melvin, K. E. W. and Slack, E. Effect of Thyrocalcitonin in man. Lancet, 1: 107, 1966.
31. Goldsmith, R. S. and Ingbar, S. H. Inorganic phosphate treatment of hypercalcemia of diverse etiologies. New England J. Med., 274: 1, 1966.
32. Cohen, P. and Gardner, F. H. Induction of subacute skeletal fluorosis in case of multiple myeloma. New England J. Med., 271: 1129, 1964.

Continued on Page 65

Indomethacin (Indocin®) in General Practice

Donald A. DeCosta, M.D.* and E. Stanley Young, M.D.**

Introduction

This paper reports on a 12 month experience with the drug Indomethacin used in a variety of musculoskeletal disorders encountered under the conditions of general practice.

One hundred and two patients were treated with Indomethacin during a one year period in which the two physicians had a total of approximately 13,800 patient visits.

The weaknesses of such a study should be noted:

1. It is a retrospective study with no systematic selection of patients, no orderly protocol for administering the drug.

2. The diagnosis of musculoskeletal disorders is not always accurate under the conditions of general practice. Each patient was arbitrarily assigned a diagnosis based on the clinical evidence, with or without x-ray or laboratory data.

3. Results of treatment were evaluated primarily on the basis of the patient's subjective response. Objective changes were used when they were present.

4. No attempt was made to make the study blind or to establish controls of any kind.

In spite of these weaknesses it would seem that some useful information could be gained from clinical impressions on the use of a drug in a wide variety of conditions, in unselected patients appearing in the general practitioner's office.

Reviews of this drug in the first few years of its use have ranged from coldly critical[2] to warmly enthusiastic.[4]

Studies which have been conducted under controlled and double blind conditions and using objective measurements have indicated that Indomethacin does have a predictable and measurable anti-inflammatory effect in many patients with rheumatoid arthritis.[3] Its antipyretic and analgesic effects are also well substantiated. It is considered that the analgesic effect is roughly equivalent to that of salicylates.[3]

It seems agreed that Indomethacin has been most consistently useful in treating ankylosing spondylitis and acute gouty arthritis.[3,4,5] Its usefulness in rheumatoid arthritis is said to be primarily in early cases and in its "steroid sparing" effects[4] in treating severe and far-advanced cases. Side effects[1,2,3,4] have been reported in a rather high percentage of cases, ranging from 20% to 50% overall, consisting mainly of headache, vertigo, and nausea. One author[1] estimates that about 10% of patients will discontinue use because of side effects. It is interesting to note that one author[4] has seen amelioration of the headache and vertigo by using Methysergide Maleate (Sansert®) 1 mg b.i.d

Table A

Diagnosis	*Excellent*	*Good*	*Fair*	*Poor*	*No Follow-Up*
Rheumatoid Arthritis	3	9	6	6	2
Gout	4	6		1	
Traumatic Arthritis		5	5	1	3
Ankylosing Spondylitis	1				
Osteoarthritis	5	8	5	8	8
Bursitis		4	1	3	
Hematoma				1	
Myositis	1	1			
Low Back Strain		2	1		
Arthralgia Secondary to Viremia		1			
Tendonitis				1	
Temporal Arteritis				1	

Materials and Methods

One hundred and two patients were treated during a one year period; they were selected on the basis of possible benefit from anti-inflammatory or analgesic effects of the drug; the conditions treated were not limited to the four catagories of disease for which the manufacturer recommends the drug.

Dosage ranged from 50 to 200 mg per day, averaging 75 mg per day.

Duration of treatment in most cases was short ranging from 4-14 days. A few patients are on long-term maintenance dosage, 50 or 100 mg per day.

Patients have been arbitrarily assigned a diagnosis and response to treatment graded on the following basis:

Excellent – Definite symptomatic improvement within a few hours and complete improvement within 48 hours.

Good – At least 50% improvement within 48 hours and at least 75% improvement within 1 week.

Fair – Less than 50% improvement at any time.

Poor – Little or no improvement at any time.

Results

Results are summarized in Table A.

Selected Case Summaries

Case No. 1 – This 59-year-old chicken farmer had a history of pain and stiffness in the cervical and dorsal spine for 25 years. In the past three years he had developed pain in the low back and both hips which was aggravated by sitting long periods and relieved by lying down. Treatment with salicylates two years prior had failed to bring relief but good response had been obtained with Oxyphenbutazone (Tandearil®) 100 mg q.i.d.

Physical examination revealed fair range of motion of the

Continued on Page 65

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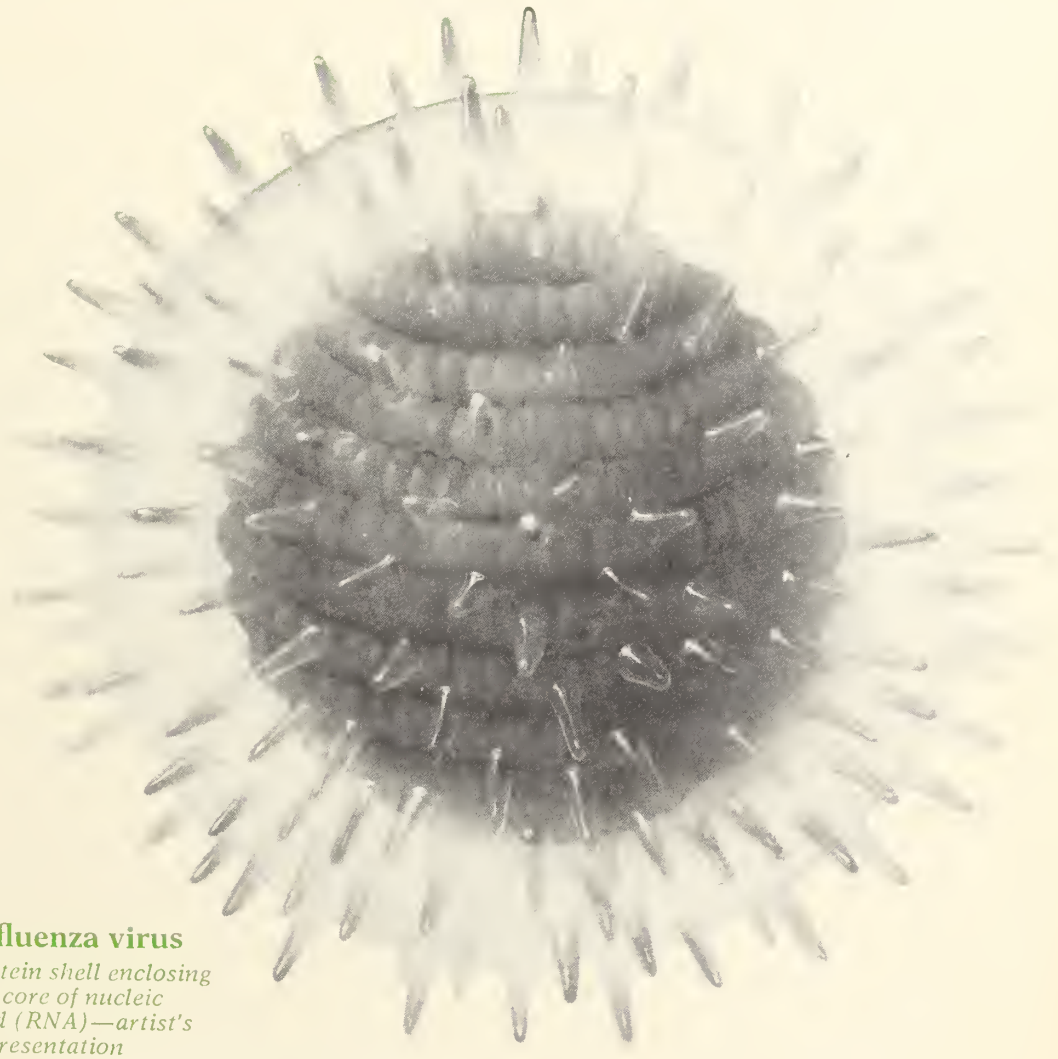
**Assistant Physician, General Practice Department, Central Maine General Hospital, Lewiston, Maine 04240.

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Influenza virus
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What is Symmetrel®? "Symmetrel" (amantadine HCl) is a new synthetic chemical which acts as a molecular barrier to virus penetration. It provides for the first time specific oral medication for the prevention of respiratory infections caused by influenza A_2 (Asian) viruses—an entirely new approach in preventive medicine.

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...does not interfere with normal antibody response; acts in concert with pre-existing antibody.

What Symmetrel® means to your patient

...possible immediate influenza A_2 protection when taken following suspected contact.

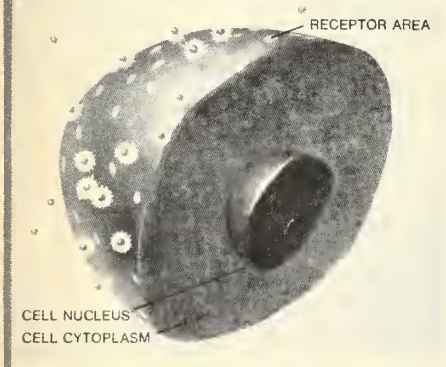
...may be particularly useful during outbreaks or epidemics and for high-risk patients in whom the occurrence of influenza A_2 is especially hazardous.

...a high degree of safety in clinical use.

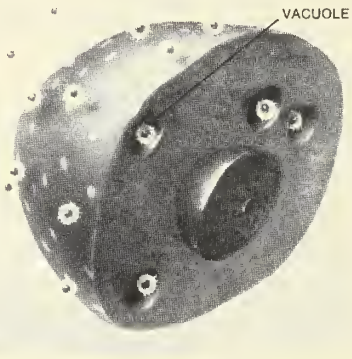
...simple once daily or b.i.d. dosage.

The mode of action of Symmetrel®

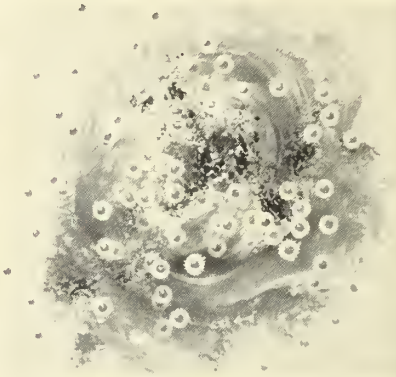
How the influenza virus invades and destroys the untreated cell



1 Viruses outside the cell attach themselves to specific cell receptor areas

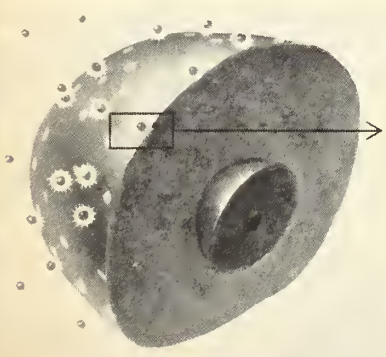


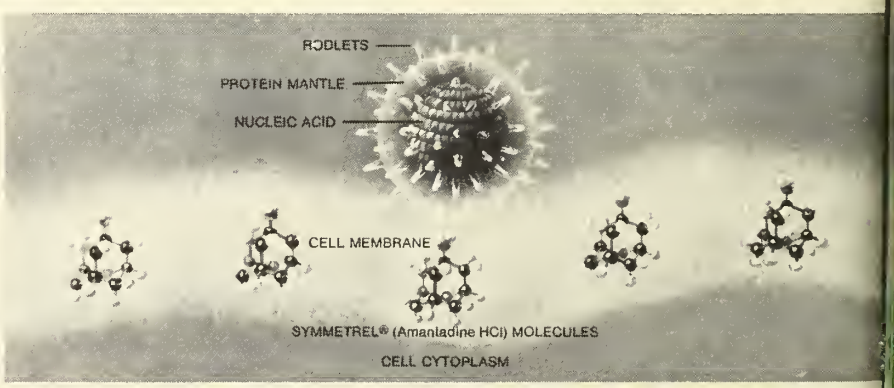
2 The virus is incorporated into a vacuole within the cell. From this vacuole the virus nucleic acid passes into the cell cytoplasm



3 The virus nucleic acid then directs the cell to produce both new virus nucleic acid and virus protein coat material which aggregate to form new virus particles. This process leads to the release of new virus particles and eventual destruction of the cell

How Symmetrel® (Amantadine HCl) prevents virus invasion[1]





Our current knowledge leads us to believe "Symmetrel" acts as a molecular barrier to influenza virus penetration. Shown here in a greatly enlarged section, "Symmetrel"—located at the cellular membrane—effectively prevents (blocks) virus penetration. Thus, "Symmetrel" does not directly destroy the virus particle but acting as a virostat prevents the cycle of virus penetration, virus replication, and cell destruction that is characteristic of virus invasion of animal cells (tissue). *Artist's conception based on current scientific knowledge.*

1. "Mode of Action of the Antiviral Activity of Amantadine in Tissue Culture", Hoffmann, C. E.; Neumayer, E. M.; Hall, R. F.; and Goldsby, R. A., Journal of Bacteriology *90*,623 (1965).

Safety of Symmetrel® Confirmed. When used as indicated, is generally well tolerated. No kidney, liver, bone marrow, or hematological disturbances have been observed.

Prescribing Information

Indications: "Symmetrel" is indicated for the prevention (prophylaxis) of influenza A_2 in persons of all age groups. Early use is recommended, preferably before or as soon as possible after actual or suspected contact with individuals suffering from influenza A_2. "Symmetrel" should especially be considered for high influenza-risk patient groups such as those suffering from chronic debilitating diseases and elderly persons.

Contraindications: Not indicated for the prevention of influenzal or respiratory illness other than influenza A_2 or for the treatment of established disease.

Warnings: Administration to patients with central nervous system disease, particularly geriatric patients with cerebral arteriosclerosis, and patients with a history of epilepsy or other "seizures," requires strict observation for possible untoward effects (see Adverse Reactions). Patients taking psychopharmacologic drugs, central nervous system stimulants, or alcoholic beverages should be observed for possible evidence of intolerance. Those patients who experience central nervous system effects or blurring of vision should be cautioned against driving or working in situations where alertness is important.

No teratogenic effects have been seen in reproductive studies in rats and rabbits. Studies in pregnant women have, however, not been done and use of this drug in women of childbearing age should be undertaken only after weighing the possible risks to the fetus against benefit to the pregnant patient. It should not be administered to nursing mothers since it is not known whether the drug is secreted in the milk.

Precautions: Ineffective against bacterial infections. Patients should be observed for idiosyncratic reactions as with all new drugs. Geriatric patients with pre-existing serious medical illnesses with mental or physical deterioration should be followed carefully medically while taking "Symmetrel." (See Adverse Reactions.)

Adverse Reactions: With higher than indicated doses manifestations of central nervous system effects such as nervousness, insomnia, dizziness, lightheadedness, drunken feeling, slurred speech, ataxia, inability to concentrate and some psychic reactions including depression and feelings of detachment were seen. Occasional blurred vision was reported at higher doses. Some of the milder and less pronounced symptoms above have been reported in a small number of patients taking the recommended dosage of 200 mg per day. Those were mostly transient and disappeared with continued administration of the drug. Some geriatric patients developed paranoid or hallucinatory behavior and became unmanageable while taking 200 mg daily. Medically unselected seriously deteriorated geriatric patients showed poor clinical tolerance after several weeks of daily dosing with 200 mg per day. One elderly patient with a history of prior cerebrovascular accident developed visual hallucinations and grand-mal convulsions while on drug at 800 mg per day. Some cases of dry mouth, gastrointestinal upset and skin rash and rarely, tremors, anorexia, pollakiuria, and nocturia have been also reported.

Safety: When used as indicated, is generally well tolerated. No kidney, liver, bone marrow, or hematological disturbances have been observed.

Dosage: *Adults:* Two 100 mg capsules (or 4 teaspoonfuls of syrup) as a single daily dose or the daily dose may be divided into one capsule of 100 mg (or 2 teaspoonfuls of syrup) twice a day.

Children: 1 yr.—9 yrs. of age: Calculate total daily dose on the basis of 2 mg to 4 mg per pound of body weight per day (but not to exceed 150 mg per day). Daily dose, given as the syrup, should be given in 2 or 3 equal portions.

9 yrs.—12 yrs. of age: Total daily dose 200 mg given as one capsule of 100 mg (or 2 teaspoonfuls of syrup) twice a day.

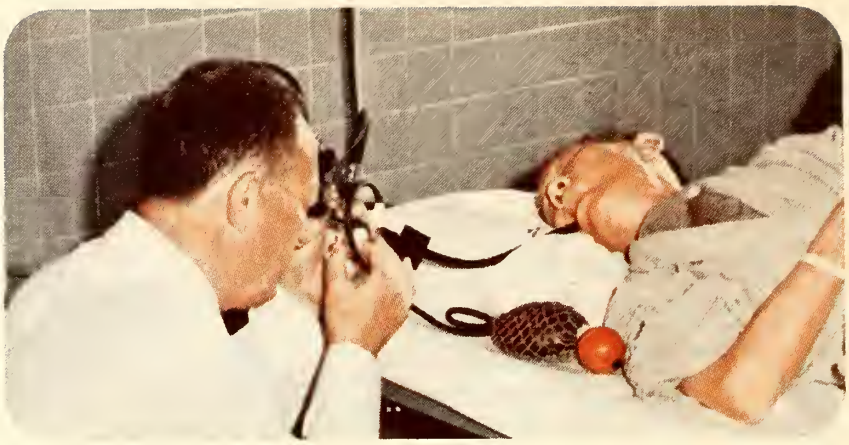
How Supplied: *Capsules:* Bottles of 100. Each red, gelatin capsule contains 100 mg amantadine HCl.
Syrup: Bottles of 1 pint. Each 5 ml (1 teaspoonful) contains 50 mg amantadine HCl.

DUPONT

Symmetrel®

(Amantadine HCl)

A molecular barrier to virus penetration



NEW EVIDENCE:

Pro-Banthine® (propantheline bromide)
gives positive, selective benefits in gastrointestinal disorders.



Intragastric photograph of pyloric region showing complete relaxation of pyloric sphincter with 6 mg. of Pro-Banthīne intravenously.

AN IMPORTANT PROBLEM in managing gastrointestinal disorders has been the choice of an anticholinergic agent which will act positively and selectively on the gastrointestinal tract without extensive secondary effects.

Recent direct observations with the cinefibergastroscope and intragastric photography[1] visually confirm previous evidence that Pro-Banthīne does, indeed, possess such selective activity.

Barowsky and his associates demonstrated that a minimal dose of 6 to 8 mg. of Pro-Banthīne intravenously produced complete relaxation of gastric activity. Secondary effects were not significant.

By contrast, it required 0.8 mg. or double the usual dose of atropine intravenously to achieve similar gastric relaxation. Side effects of this dosage of the belladonna alkaloid were pronounced. Ventricular rates were as high as 150 per minute.

For positive, selective anticholinergic benefits Pro-Banthīne is indicated in patients with peptic ulcer, gastritis, irritable colon and other forms of gastrointestinal hypermotility.

Dosage: The maximal tolerated dosage is usually the most effective. For most *adult* patients this will be four to six 15-mg. tablets daily in divided doses. In severe conditions as many as two tablets four to six times daily may be required. Pro-Banthīne (brand of propantheline bromide) is supplied as tablets of 15 mg., as prolonged-acting tablets of 30 mg. and, for parenteral use, as serum-type ampuls of 30 mg. The parenteral dose should be adjusted to the patient's requirement and may be up to 30 mg. or more every six hours, intramuscularly or intravenously.

Contraindications: In glaucoma or severe cardiac disease.

Precautions: Since varying degrees of urinary hesitancy may occur in the elderly male with prostatic hypertrophy, this should be watched for in such patients until they have gained some experience with the drug.

Although never reported, theoretically a curare-like action may occur with possible loss of voluntary muscle control. Such patients should receive prompt and continuing artificial respiration until the drug effect has been exhausted.

Side Effects The more common side effects, in order of incidence, are xerostomia, mydriasis, hesitancy of urination and gastric fullness.

1. Barowsky, H.; Greene, L.; Bennett, R., and Buganza, G.: The Effect of Anticholinergic Drugs on Gastric Motility and Pyloric Function, Scientific Exhibit, Annual Convention of the American Medical Association, Chicago, Illinois, June 26-30, 1966.

When the battle with bacteria is in the upper respiratory tract

Routes of invasion through the oral and nasal passages to the nasopharyngeal mucosa: artist's depiction of sagittal section of head in perspective.



consider Gantanol (sulfamethoxazole)



To rapidly help the patient win against upper respiratory infections

When the respiratory tract has been invaded, an antibacterial that can assure effective yet generally uncomplicated therapy is your first line of defense...an agent such as Gantanol (sulfamethoxazole), the wide-spectrum antibacterial from Roche.

Gantanol (sulfamethoxazole) is effective against common susceptible upper respiratory pathogens, both gram-positive and gram-negative. Acting at foci of bacterial invasion, Gantanol (sulfamethoxazole) promptly helps control most infections, yet usually presents few problems to patients. Dosage is convenient and provides a measure of economy.

Before prescribing, please consult complete product information, a summary of which follows:

Contraindicated in sulfonamide-sensitive patients, pregnant females at term, premature infants, or newborn infants during first three months of life.

Warnings: Use only after critical appraisal in patients with liver damage, renal damage, urinary obstruction or blood dyscrasias. If toxic or hypersensitivity reactions or blood dyscrasias occur, discontinue therapy. In intermittent or prolonged therapy, blood counts and liver and kidney function tests should be performed.

Precautions: Observe usual sulfonamide therapy precautions, including maintenance of an adequate fluid intake. Use with caution in patients with histories of allergies and/or asthma. Patients with impaired renal function should be followed closely since renal impairment may cause excessive drug accumulation. Occasional failures may occur due to resistant microorganisms. Not effective in virus or rickettsial infections.

Adverse reactions: Headache, nausea, vomiting, urticaria, diarrhea, hepatitis, pancreatitis, blood dyscrasias, neuropathy, drug fever, skin rash, Stevens-Johnson syndrome, injection of the conjunctiva and sclera, petechiae, purpura, hematuria or crystalluria may occur, in which case the dosage should be decreased or the drug withdrawn.

Dosage: Adults—4 tablets initially, then 2 tablets b.i.d. or t.i.d. depending upon severity of infection. Children—1 tablet/20 lbs initially, followed by ½ tablet/20 lbs b.i.d.

How supplied: Tablets, 0.5 Gm, bottles of 50.

Roche Laboratories, Division of Hoffmann-La Roche Inc., Nutley, N. J. 07110

When there are bacterial invaders in the upper respiratory tract

Gantanol®
(sulfamethoxazole)

ROCHE



"Yes, Doctor, the pain is gone."

■ Despite introduction of synthetic substitutes, efficacy of 'Empirin' Compound with Codeine remains unchallenged.

'Empirin'® Compound with Codeine Phosphate gr. ½ No. 3
Each tablet contains: Codeine Phosphate gr. ½ (Warning—May be habit forming), Phenacetin gr. 2½, Aspirin gr. 3½, Caffeine gr. ½.

Keeps the Promise of Pain Relief

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spine and hips, flattening of the lumbar curve and mild lumbar muscle spasm.

X-rays showed early arthritic changes in the hips and upper lumbar spine. Uric acid was 6.9 mg%. Sedimentation rate was 10 mm/hour. Latex fixation test was negative.

He was considered to have osteoarthritis of the hips and lumbar spine and was treated with Indomethacin with immediate excellent subjective improvement.

Case No. 2 – This 51-year-old white highway department supervisor had had an injury to his right foot 20 years ago, resulting in fracture of several metatarsals. Over the years the foot had become painful and swollen several times, each attack lasting a few days.

Examination revealed redness, swelling, and tenderness over the metatarsals and marked pain on weight bearing.

Diagnosis was a question of traumatic arthritis. He was treated with Indomethacin 25 mg q.i.d. and limited weight bearing. Response was definite but gradual – he was free of signs and symptoms in 14 days.

Case No. 3 – This 44-year-old white unemployed veteran presented with a red, swollen, painful right elbow of two weeks duration without history of trauma or previous joint disease.

Examination showed an acutely inflamed joint with obvious redness, swelling, pain on motion, and limitation of motion to about 15°. The olecranon bursa was fluctuant.

Uric Acid was 10.7. Latex fixation test was positive. ESR was 40mm/hour. Aspirate from a fluctuant olecranon bursa obtained purulent material which contained predominantly polymorphonuclear leucocytes. This aspirate grew out Coagulase Positive Hemolytic Staphylococcus Aureus. No uric acid crystals were seen.

The provisional diagnosis of gouty arthritis was made. He was treated initially with Benemid® and Prednisone without improvement in one week. At that point Prednisone was discontinued and Indomethacin 50 mg q.i.d. was started. Relief of pain occurred within 4 hours. In 24 hours evidence of inflammation had lessened by 75% and range of motion was about 45°. Gradual improvement continued and he became symptom-free in about 10 days, although the infected bursa continued to drain for two more weeks.

Case No. 4 – This 42-year-old white male had onset of low back pain at age 25. Pain had gradually progressed up the back and his present complaint was of pain on either side of the posterior chest cage when trying to lie on his back.

Examination revealed mild kyphosis of lumbodorsal spine, fair range of motion of the lumbodorsal spine, and somewhat diminished rotation of the neck to the left.

X-rays three years prior had shown evidence of changes in the sacroiliac joints typical of ankylosing spondylitis.

Diagnosis was made of mild ankylosing spondylitis and he was started on Indomethacin 25 mg, t.i.d. Within 48 hours he noted marked lessening of his symptoms. Re-examination showed somewhat improved range of motion of back and neck at the end of seven days.

Summary

The results reported here seem to be consistent with other reports in the literature. It would appear that Indomethacin does have an anti-inflammatory effect; it is less potent than that of corticosteroids and is comparable to that of Phenylbutazone (Butazolidin®) and Oxyphenbutazone.

Its most obvious advantage over the other anti-inflammatory drugs is its lack of serious toxic effects, and its most obvious disadvantage is the frequency of minor side effects. Side effects in our study have been less than generally reported, amounting to about 10% overall, equally divided between Gastrointestinal and Central Nervous System symptoms.

We have noted the most dramatic results in the acute inflammatory conditions and the least definite results in chronic conditions.

Indomethacin is earning itself a well-defined niche in the anti-inflammatory hierarchy, located between the salicylates and the adrenal corticosteroids.

References

1. Bilka, Paul J., et al: Indomethacin: A new antirheumatic agent, Minnesota medicine, Vol. 47, July 1964, pp. 777-781.
2. Boardman, P.L. and Hart, F. Dudley: Indomethacin in the Treatment of Acute Gout, The Practitioner, April 1965, Vol. 194, pp. 560-565.
3. Smyth, Charley J.: Indomethacin in Rheumatoid Arthritis. A comparative Objective Evaluation with Adreno Corticosteroids, Arthritis and Rheumatism, Vol. 8, No. 5, October 1965, pp. 921-942.
4. Berman, L.: The Role of Indomethacin in Rheumatoid Conditions: With Special Reference to Patients Previously Treated with Steroids, Excerpta Medica International Congress Series No. 82, Sept. 1964, pp. 383-388.
5. Rothermich, Norman O.: An extended study of Indomethacin. II Clinical Therapy, J.A.M.A., 28 March 66, 195:1102-6.

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MARKED HYPERCALCEMIA IN MULTIPLE MYELOMA – *Continued from Page 63*

33. Cohen, P. Therapy of Myeloma Bone Lesions. JAMA, 198: 583, 1966.
34. Osserman, E. F. Therapy of plasma cell myeloma with Melphalan (1-phenylalanine mustard). Proc. Am. A. Cancer Res., 4: 50, 1963.
35. Finkel, H. E., Yount, W. J., Salmon, S. E. and Schilling, A. Current Concepts in the Therapy of Multiple Myeloma. Med. Clin. North America, 50: 1569, 1966.
36. Noble, J. D., Verner, J. V. and Engel, F. L. The Diagnostic Spectrum of Hypercalcemia. Amer. J. Med., 33: 88, 1962.
37. Strauss, M. D. and Welt, L. G. Diseases of the Kidney, pp. 575-582, Boston, Little, Brown and Co., 1963.

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Dr. Rosenblatt, 480 Main Street, Lewiston, Maine 04240.

Maine Heart Association Notes

116 State Street, Augusta, Maine

Death Is Not Unannounced

The death rate from myocardial infarction has remained relatively unaltered in the past 30 years. Eighty-five percent of the deaths occur during the first week after onset of infarction; nearly half of these patients die as a direct consequence of arrhythmias. . . . these electrical catastrophes are ordinarily not caused by nor need they result in irreversible cardiac damage. Recognition of the importance of the prompt treatment of arrhythmias has resulted in the establishment of . . . coronary care units. . . . Although these . . . diagnostic and therapeutic areas have resulted in some decrease in the number of electrical cardiac deaths, the overall figure for long-range survival after resuscitation is . . . a low 38%.

Lown and associates . . . indicate that there must be a change in emphasis in coronary care units. The mortality is unacceptably high once the need for resuscitation occurs. . . . prevention of the need for resuscitation remains the logical focus of management. Thanks to the availability of continuous monitoring . . . , "death, while sudden, is not unannounced." Arrhythmia deaths are usually preceded by easily recognized electrocardiographic patterns which provide time for counter-measures. . . . premonitory derangements include ventricular extrasystoles, bradycardia, and atrioventricular block. . . . Individualization rather than standardization is advocated for both prophylaxis and treatment of premonitory arrhythmias.

. . . the fact that after institution of this regimen not a single instance of primary ventricular fibrillation occurred in 130 consecutive unselected patients with myocardial infarction is a critical observation. . . . The data reported by Lown suggests the need for a change in emphasis to identification and prompt treatment of so-called minor rhythm disorders.

Submitted by Jacob B. Dana, M.D., Maine Heart Association
Reference: Editorial, JAMA, Vol. 199, Page 210, 1967

State Of Maine

DEAN H. FISHER, M.D.
COMMISSIONER

Department of Health and Welfare

Measles Eradication in Maine

L. RANDLE COKER, M.D.*

Increasing use of live attenuated measles virus to immunize susceptible persons against measles (rubeola) has brought practical eradication of this disease to the State of Maine. This goal was achieved through an unusually well-balanced, coordinated effort on three levels of individual and government action. The federal contribution consisted in making available vaccine in large quantities for pre-school children for use by physicians in office practice and in public clinics. The state has supplied vaccine for school-age children and paid physicians for their services in many public clinics; organization of clinics by State public health nurses and district health officers was also a major contribution. Administration of privately and publicly purchased vaccine in physicians' offices, organization of many clinics by local civic groups and local health officers and other interested persons, promotional information distributed by newspapers and radio stations, and the response of parents all were important parts of the individual and local government effort. It is clear that the absence of activity on any one of these three levels would have delayed this achievement by months or years.

Data reflecting the number of doses of privately purchased vaccine which have been administered have not been assembled. Table 1 shows the figures for distribution and usage of vaccine purchased by the State and by the U.S. Public Health Service.

Figure 1 illustrates the fall in reported cases of rubeola. It is felt that the renewed interest in measles which the measles vaccine has brought about has greatly increased reporting efficiency recently.

Now that the measles problem has been reduced to manageable proportions, future control rests on three approaches:

1. Surveillance. Prompt reporting of the first cases of measles appearing in a community can alert the local health officer and State health personnel to the presence of measles early enough to avert an epidemic through immunization efforts in populations with low immunity levels.

2. Assessment of immunization level among school enterers at the beginning of each school term. Immunization should be encouraged for all susceptibles; however, a safe level for avoiding epidemics is 80% immune in each school room (including subprimary or kindergarten groups).

3. Continuing immunization at 12 months of age. If this is carried out well in all communities, it is obvious that after about 5 years the first two approaches will decline considerably in importance or become completely unnecessary.

All efforts now in establishing measles immunization as a routine medical procedure when a child becomes one year old will soon convert practical eradication to complete eradication. The near future will see measles control responsibility almost entirely in the hands of the physician who cares for young children. If all such physicians recognize this responsibility, measles in Maine will become as rare a disease as smallpox.

TABLE 1

DISTRIBUTION AND USAGE OF STATE-PURCHASED AND U.S. PUBLIC HEALTH SERVICE-PURCHASED MEASLES VACCINE

Period	*Doses Given*	*Doses Distributed*	*Doses Not Yet Given*
1965	6,575 all ages		
1966 (Jan. 1 to Oct. 1)	2,249 all ages		
1966 (Oct. 1 to Dec. 31)	11,591 pre-school	50,906	26,633
	12,682 school		
Two-year total	33,097		



Fig. 1. Reported cases per 100,000 population (on annual basis) in Maine.

*Communicable Disease Control.



when he just can't sleep

Tuinal®

Sodium Amobarbital and Sodium Secobarbital

(One-Half Sodium Amobarbital and One-Half Sodium Secobarbital)



Tuinal helps wakeful patients fall asleep fast, stay asleep all night.

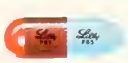
Indications: Tuinal, comprised of equal parts of Seconal® Sodium (sodium secobarbital, Lilly) and Amytal® Sodium (sodium amobarbital, Lilly), is indicated for prompt and moderately long-acting hypnosis.

Contraindications: Barbiturates should not be administered to anyone with a history of porphyria, nor should they be given in the presence of uncontrolled pain, because excitement may result.

Warning: May be habit-forming.

Precautions: Tuinal should be used cautiously in patients with decreased liver function, since prolongation of effect may occur.

Adverse Reactions: Idiosyncrasy, such as excitement, hangover, or pain, may appear. Hypersensitivity reactions occur in some patients, especially in those with asthma, urticaria, or angioneurotic edema.



Dosage: 1½ to 3 grains at bedtime.

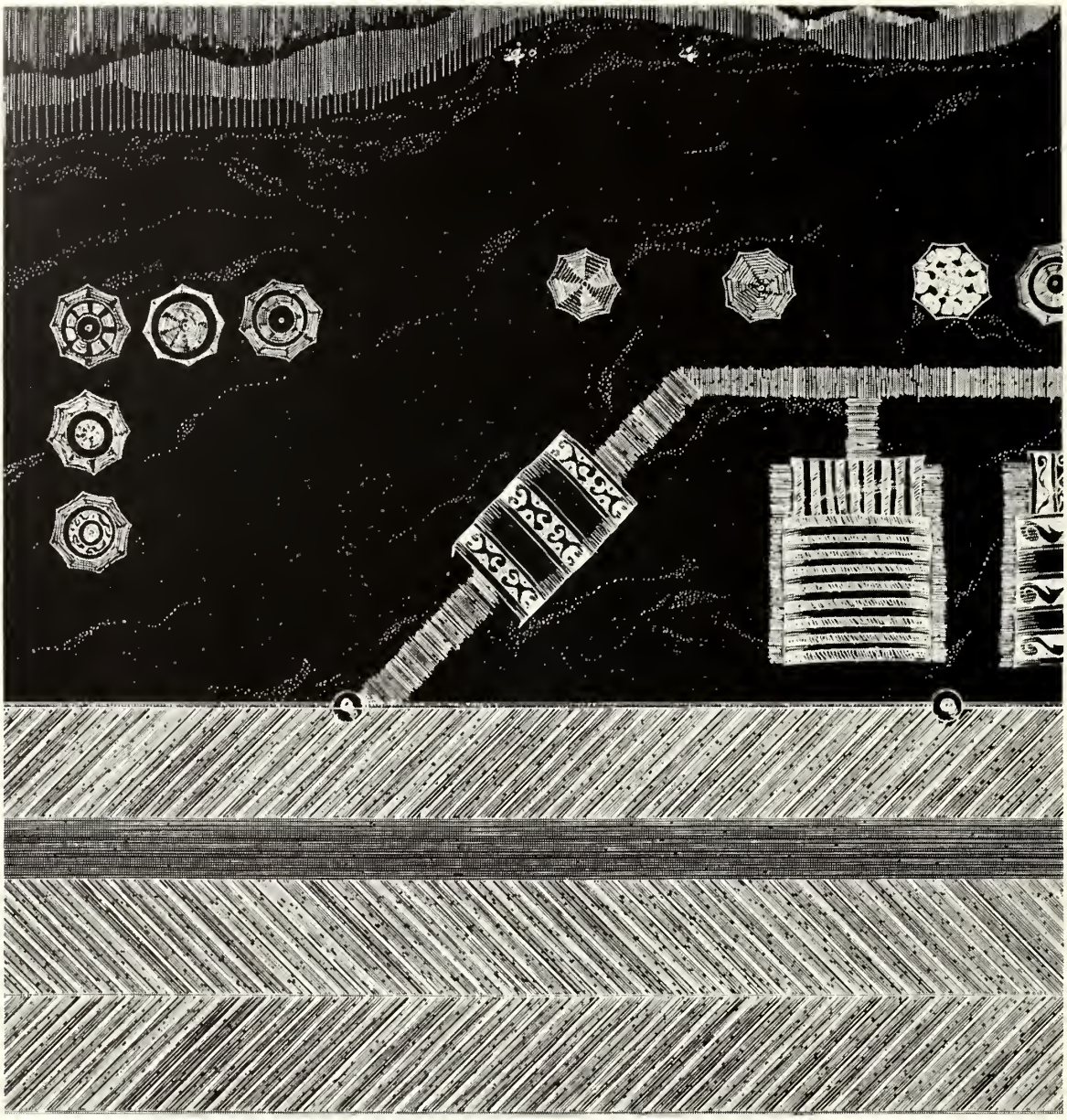
Supplied: ¾, 1½, and 3-grain Pulvules®.

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RESERVE NOW for the SCIENTIFIC AWARDS DINNER in honor of the Scientific Award Winners—Wednesday, June 21, 1967. Since space is limited, we suggest you make your reservations before June 1, 1967. Tickets are $10.00 each, payable in advance.

See JAMA May 8, 1967 for complete scientific program—forms for advance registration and hotel accommodations.

AMERICAN CANCER SOCIETY - MAINE DIVISION, INC.

Brunswick, Maine

Progress in Cancer Control Cited in American Cancer Society's Annual Report

NEW YORK – Major areas of progress in cancer control were cited in the American Cancer Society's Annual Report released February 14, 1967, describing new approaches for the research attack on cancer, closer liaison with government medical programs and accent on the physician's role in detecting curable cancer.

In its annual accounting to the public, ACS stressed the need for greater involvement of the physician in its programs. This was implicit in findings of a recent ACS opinion survey conducted by Lieberman Research, Inc. Perhaps the most important finding was that 90 percent of those interviewed would go for an annual physical checkup – a potentially life-saving procedure as regards cancer – if it were recommended by their physicians. However, only 43 percent of those interviewed believed that doctors would recommend it; an equal percentage stated they had no idea how doctors felt about the matter, while 14 percent felt that physicians did not think regular checkups necessary.

In the field of professional education – insuring the best and most up-to-date knowledge for physicians, dentists and nurses – the Society established "the most extensive medical film program ever undertaken by a voluntary agency." The films, directed to those in the medical and allied professions, deal with such subjects as "Oral Cancer," "Nursing Management of the Cancer Patient," and "Childhood Cancer." In addition, numerous conferences were held throughout the year for physicians, dentists and nurses (both registered and practical).

The Report describes the reappraisal of cancer research as determined by the last annual meeting of the Society. It created a new program of Research Analysis and Projection "to focus attention more sharply on areas of particular promise, and accelerate the application of research findings to help the patient with cancer." The budget for the first year of this program will be $375,000, administered by a newly created Vice President who will devote his time exclusively to the new program.

Introducing the Report, the President of the Society, Dr. Ashbel C. Williams and the Chairman of the Board, Travis T. Wallace, emphasize "that prevention must play an increasing role in cancer control." They point out that at the Ninth International Cancer Congress in Tokyo, Sir Alexander Haddow said that 80 percent of human cancers may be due to environmental factors.

The increased involvement of government in health matters, as reflected by Medicare, also received the Society's attention as a potentially fruitful challenge. In the section of the Report devoted to Service, the ACS declares: "It became obvious that with increased government . . . participation . . . emphasis should shift from community to direct services and the necessity for recruiting, selecting and orienting additional (Society) volunteers." An essential element in meeting the challenge was described as the need "to recognize the changing nature of the Society's role, to plan on the basis of intelligent foresight, and to maintain close liaison with governmental and other voluntary agencies, and at the same time be well aware of the number of cancer patients who need the Society's help and who do not qualify for the Medicare Program's benefits."

In describing the accomplishments of the year, the Report cites more than 33,000 cancer patients who had received benefits from a Loan Closet program; approximately 18,000 who had been taken to and from sites of diagnosis and treatment as part of the Society's Transportation Program; and the more than 27,000 who were aided by the ACS Nursing Service.

The Report also describes heightened ACS efforts to inform the public about cancer's seven warning signals and the importance of an annual checkup. Singling out the 2,000,000 ACS volunteers for special praise, the Report states the Society's programs of public education "would have been useless without the work of the volunteers already committed," moving from house to house to bring life-saving facts. In addition, there is a detailed description of how various business firms, churches, social and fraternal organizations lent their support to the Society's educational programs. Thus, roughly 2.9 million employees were reached thanks to cooperation from some 18,000 firms; while an approximately equal number were reached in or near their homes. More than 11 million Americans saw the Society's films, and better than 26,000 lectures, talks and question-and-answer sessions were held during the year. National unions of the AFL-CIO also cooperated in the distribution of informative materials.

One of the most widely publicized aspects of public education has been to "bring the message home" concerning cigarette smoking and health, particularly to young people. The Report cites the encouraging findings of ACS statistical expert, Dr. E. Cuyler Hammond, that there had been a drop in the percentage of smokers in his uniquely huge Cancer Prevention Study. The fall-off was 21 percent among the men; 12 percent among the women. "Donde Hay Humo," a Spanish translation of the comic-book "Where There's Smoke" aimed at the student, was produced. Also new was the cartoon film "Time for Decision." It marked an innovation, in that it was specifically addressed to community leaders and asked them to take up the challenge and recognize the health menace explicitly.

Attracting world-wide attention was the award of Nobel Prizes to two researchers who have received awards and financial support from the American Cancer Society: Drs. Charles B. Huggins and F. Peyton Rous; Dr. Huggins for his studies of hormone-treatment for cancer, and Dr. Rous for his discovery that a virus was responsible for a specific form of animal cancer. In addition, $11 million was awarded for the support of more than 400 research projects, while 23 ACS-Eleanor Roosevelt International Fellows came from (or were sent to) nations in all parts of the world to add to their training and gain new insights in different scientific environments.

Also international in scope were two other ACS activities described in the 1966 Report: Society participation in the Ninth International Cancer Congress held in Tokyo in October; and a Society-sponsored meeting – a graduate course in cancer

Continued on page 72

Necrologies

Thomas A. Foster, M.D.

1887-1967

Thomas A. Foster, M.D., 79, of Portland, Maine, a Past President of the Maine Medical Association, died on January 15, 1967. He was born in Portland on November 15, 1887, the son of Dr. Barzillai B. and Elizabeth Blodgett Foster.

Dr. Foster graduated from Portland High School in 1906, Dartmouth College in 1910 and received his medical degree from Harvard Medical School in 1914. He interned at the Hartford General Hospital in Hartford, Connecticut from 1914 to 1916 and served a residency at the Children's Hospital in Boston from 1916 to 1917. He served in the military service during World War I, following which he returned to Portland where he practiced until his retirement in 1966.



Dr. Foster was active in Maine Medical Association affairs for many years, having served as Councilor for the First District of the Maine Medical Association from 1937 to 1940, Council Chairman from 1939 to 1940 and President of the Association from 1940 to 1941. He had also served as Editor of The Journal of the Maine Medical Association and on many Committees of the Association and as delegate to the American Medical Association. Dr. Foster's father was President of the Maine Medical Association from 1907 to 1908 and his grandfather was President from 1883 to 1884.

In 1964 he was made an Honorary member of the Maine Medical Association and Cumberland County Medical Society in recognition of his fifty years in the practice of medicine. Dr. Foster received the Roselle W. Huddilston Medal in 1965 for "outstanding contributions in the general field of health to the people of the State of Maine," and Bowdoin College conferred on him the degree of Honorary Service for his many contributions to the children of Maine and to medical and health organizations.

For 24 years Dr. Foster was chief of the children's medical service at the Maine General Hospital in Portland, was pediatric consultant to Knox County General Hospital in Rockland, and was on the consulting staffs of the Goodall Hospital in Sanford and the St. Andrew's Hospital in Boothbay Harbor. He was Secretary and President of the Portland Medical Club, President of the Maine Pediatric Society and the New England Pediatric Society and a charter member of the American Academy of Pediatrics. He was also a member of the American Medical Association, the National and Cumberland County Tuberculosis and Health Associations, the Ancient Landmark Lodge, AF & AM, and the Mt. Vernon Chapter, the Harold T. Andrews Post, AL, and was a past member of the Portland Rotary Club and a past director of the Fraternity Club.

Dr. Foster's wife, Harriet Bucknam Foster, died on January 8.

Walter D. Hall, M.D.

1874-1967

Walter D. Hall, M.D., 92, of Rockland, Maine died on January 20, 1967. He was born in New York City on February 15, 1874, the son of Dr. Walter Langdon and Jennie Failing Hall.

Dr. Hall graduated from Medford High School in Medford, Massachusetts in 1893, attended Tufts College for two years, and received his medical degree from Tufts University School of Medicine in 1898.

He practiced medicine in Mexico from 1898 to 1900 and in Medford, Massachusetts from 1900 to 1912. He joined the British Merchant Marine, serving aboard the SS Vestris until 1922. In 1928 he moved to Port Clyde and practiced there and in Rockland until his death.

Dr. Hall was an Honorary member of the Maine Medical Association and the Knox County Medical Society, having received a 50-year pin in 1948, a 55-year pin in 1953, a 60-year pin in 1958 and a 65-year pin in 1963. He was also a member of the American Medical Association.

Surviving are two daughters, Mrs. John A. Ricker, president of the Medford Women's Club and well-known artist and Mrs. Robert J. Sibley, Jr., an actress, of Winchester; six grandchildren and two great-grandchildren.

Harold W. Stanwood, M.D.

1884-1966

Harold W. Stanwood, M.D., 81, of York Harbor, Maine died on December 9, 1966. He was born in Canton, Maine on December 31, 1884, the son of Albert Linscott and Nellie J. Stanwood.

Dr. Stanwood graduated from Hebron Academy, Bowdoin College and received his medical degree from Bowdoin Medical School in 1912. He interned at the Central Maine General Hospital in Lewiston.

He practiced medicine in Rumford and York from 1912 to 1960 and then located in Dixfield where he practiced until his retirement several years ago.

Dr. Stanwood was an Honorary member of the Maine Medical Association and the Oxford County Medical Society, having received a 50-year pin at the Maine Medical Association's annual session in 1962. He would have been eligible for a 55-year pin at the annual session of the Association in June. He was also a member of the American Medical Association, a staff member of the Rumford Community Hospital, Rumford school physician for many years and was active in the Rotary Club, the Cosmos Club and Masonic bodies.

Surviving are two daughters, Mrs. Leo King of Woolwich and Mrs. Sally Gear of York; a son, Harold K. of York; a sister, Mrs. Walter Morse of Dixfield; and eleven grandchildren.

Harold S. Pratt, M.D.

1887-1967

Harold S. Pratt, M.D., 79, of Livermore Falls, Maine died on January 8, 1967. He was born in Strong, Maine on August 8, 1887, the son of the Reverend Jacob Loring and Lucy Soule Pratt.

Dr. Pratt attended schools in Strong and Farmington, graduated from Bowdoin College in 1909 and received his medical degree from Bowdoin Medical School in 1912. He interned at the Maine General Hospital in Portland from 1912 to 1913 and did postgraduate study at the University of Pennsylvania Hospital and the Medical School of New York.

He practiced medicine in Farmington from 1913 to 1918, served with the U.S. Army in France and Germany as a 1st

Lieutenant from 1918 to 1919 and then located in Livermore Falls where he practiced as a surgeon and general practitioner until his death.

Dr. Pratt was an Honorary member of the Maine Medical Association and the Androscoggin County Medical Association, having received a 50-year pin at the Maine Medical Association's annual session in 1962. He would have been eligible for a 55-year pin at the annual session of the Association in June. He was a former member of the Franklin County Medical Society, a member of the staff of the Franklin County Memorial Hospital from 1928 to 1939, an associate staff member at the Franklin County Memorial Hospital and Central Maine General Hospital and medical examiner of Androscoggin County for many years. He was also a past commander of George L. Bunten Post, American Legion, a member of all Masonic bodies, both York and Scottish Rites, a 50-year member of Oriental Star Lodge, F & AM, of which he was a past master, a past high priest of the Androscoggin Royal Arch Chapter, RAM, a past district deputy of the Grand Lodge of Maine, and a member of Kora Temple Shrine and Washburn Chapter, OES.

Surviving are his widow, Cora Johnson Chase Pratt of Livermore Falls; two sons, Elbert S. of Clifton, New Jersey and Dr. Philip C. Pratt of Durham, North Carolina; two brothers, Dr. George L. Pratt of Farmington and Dr. Lyde S. Pratt of Fairfield; and two grandsons.

County Society Notes

WASHINGTON

A meeting of the Washington County Medical Society was held on January 16, 1967 at the Dennys River Inn in Dennysville, Maine with eleven members and guests present.

Helen C. Provost, M.D., Director, Division of Maternal Health and Child Welfare of the State of Maine Department of Health and Welfare was introduced by the President, Robert G. MacBride, M.D. Dr. Provost said that she was much interested in setting Maternal and Child Welfare Clinics at the Machias Hospital and at the Calais Hospital. There was considerable discussion following this and there were many against the initial proposed setup. It was felt, however, that a compromise plan could be made with clinic-like arrangements in Machias, Eastport and Calais whereby the patients would be handled by their own physicians, under the overall supervision of an Obstetrical consultant and Pediatric consultant. No final moves were made at this meeting and further discussion is to be undertaken at a later meeting.

Niles L. Perkins, M.D., Director, Bureau of Medical Care of the State of Maine Department of Health and Welfare also spoke in favor of Dr. Provost's plan and mentioned some areas of compromise that could be worked out.

KARL V. LARSON, M.D., *Secretary*

ANDROSCOGGIN

The annual meeting of the Androscoggin County Medical Association was held at St. Mary's General Hospital in Lewiston, Maine on November 17, 1966. The meeting was called to order by the President, Harvey J. Proulx, M.D.

Wedgwood P. Webber, M.D. reported for the Nominating Committee and proposed the following slate of officers and delegates which was approved:

President, Daniel R. Shields, M.D., Lewiston
Vice-President, Joseph J. Rando, M.D., Lewiston
Secretary-Treasurer, Donald L. Anderson, M.D., Lewiston
Delegates to the Maine Medical Association House of Delegates: Drs. Harvey J. Proulx, Morris E. Goldman, Joseph J. Rando, all of Lewiston, and Frederick B. Lidstone, Auburn. Alternates: Drs. Daniel R. Shields, Philip L. Archambault, Gerard L. Morin, all of Lewiston, and Charles A. Hannigan, Auburn

Charles W. Steele, M.D. reported on the Blue Shield meeting he had attended. He urged that any problem arising be brought to his attention so that he can present them at the meetings for discussion.

Sgt. Jeff Nadeau, Recruiting Sergeant of the U.S. Marine Corps, was the guest speaker. Sgt. Nadeau was chosen as the Marine representative on President Kennedy's Health Council. He outlined in general exercise requirements for a simple program but stressed that doctors were too busy helping others, consequently neglecting their own "machines." Only 12 to 15 minutes a day is needed to keep in trim. Isometric exercises are good for maintaining tone once conditioning is established. He pointed out the complications encountered in various exercises such as push-ups and use of rowing machines. Royal Canadian Air Force exercises graduated in type are probably the best system now in publication. Sgt. Nadeau has exercise sheets available at his office in the Lewiston Post Office Building.

A meeting of the Androscoggin County Medical Association was held at the Central Maine General Hospital in Lewiston, Maine on January 19, 1967. The meeting was called to order by the President, Daniel R. Shields, M.D.

Dr. Shields reappointed Drs. George B. O'Connell, Chairman, Eustache N. Giguere and Ralph A. Goodwin, Sr. to the Resolutions Committee for the ensuing year. A resolution on the death of Harold S. Pratt, M.D. is to be presented at the next meeting.

Charles W. Steele, M.D. reported for the insurance committee and presented an interesting interview with computer troubles. Very few claims are being questioned. He stressed OAA members with medicare and the importance of putting OAA above medicare numbers as an aid in processing. He also showed a sample of the stamp which is acceptable on forms.

It was moved and voted to refer the question of fluoridation of water to the Committee on Public Health.

DONALD L. ANDERSON, M.D., *Secretary*

HANCOCK

The Hancock County Medical Society met at Brookside Restaurant in Ellsworth, Maine on February 8, 1967.

The guest speaker was Walton P. C. Clason, M.D., internist, of Ellsworth, Maine. Dr. Clason spoke on the philosophy of intensive care versus the intensive care unit. He emphasized the need to develop the concept of giving intensive care by trained personnel to selected patients rather than setting aside a designated physical area, with elaborate equipment, to be used in only critically ill patients.

RUSSELL G. WILLIAMSON, M.D., *Secretary*

CUMBERLAND

A combined meeting of the Cumberland County Medical Society and the Woman's Auxiliary was held at the Sheraton-Eastland Motor Hotel in Portland, Maine on January 19, 1967 with two hundred and fifty-five members and guests present.

George W. Hallett, Jr., M.D. of Portland, Maine was the guest speaker. Dr. Hallett gave a description of his recent medical service in Vietnam.

Sixty-five members attended the Cumberland County Medical Society meeting held at Carolyn's in Cape Elizabeth, Maine on February 16, 1967.

Following a social hour and smorgasbord the meeting was called to order by the President, Charles W. Capron, M.D. Considerab'e discussion ensued regarding the October meeting to be sponsored by Lederle Laboratories, a meeting which will be jointly supervised by the American Academy of General Practice and the Cumberland County Medical Society. The membership passed the following resolution: "That the Cumberland County Medical Society invite all individual Doctors of Osteopathy to the Lederle Symposium in October 1967." It was also mentioned that the house officers at the local hospitals should be included in the invitations.

Sumner E. Moulton, M.D. reported on the Utilization Committee for Extended Care Facilities. He outlined the scope of the problems facing his Committee, the organizational meetings held to date, and plans for the future. He emphasized the need for a summary of medical information when a patient is transferred from a hospital to an extended care facility and stated that the usual discharge summary would be entirely appropriate.

Stephen E. Monaghan, M.D. reported on the Massachusetts experience with third party payment of Medicare fees, listing advantages and disadvantages, with two primary purposes being evident: consolidation of multiple bills into just one for the patient and consolidation of multiple small bills and bookkeeping entries into one coordinated payment to the physician.

Charles R. Glassmire, M.D. mentioned the bill in the legislature which would necessitate use of generic names of drugs when ordering medications; in addition, he called the attention of the membership to the Beatrice Davis fund, set up to provide funds for legal and medical students as well as certain physicians desiring further medical education.

Edward G. Asherman, M.D. stated that his committee is working on the revision of the Bylaws. At Dr. Moulton's request, Dr. Capron indicated that he would investigate the possibility of legislation to provide immunity from legal action for members of Utilization Committees.

Alice A. S. Whittier, M.D. presented a resolution on the death of Thomas A. Foster, M.D. and the membership voted to spread a copy of the resolution upon the Society's records and to send a copy to the family.

Robert E. McAfee, M.D. reported on the success of the Health Careers Program and proposed a possible program of medical instruction for school teachers. A brief discussion followed concerning the limitations of coverage of the Blue Cross-Blue Shield contract carried by the Maine Medical Association.

STANLEY B. SYLVESTER, M.D., *Secretary*

KENNEBEC

The Kennebec County Medical Association met at the Holiday Inn in Augusta, Maine on February 16, 1967.

The President, Robert L. Ohler, M.D. appointed two committees: 1.) The Committee for Continuing Education under the chairmanship of Francis J. O'Connor, M.D. Other members of the Committee have not been appointed; 2.) The second committee, title of which has not been definitely decided upon, but essentially Social Responsibility of the Kennebec County Medical Association under the chairmanship of John D. Denison, M.D. with Vaughn R. Sturtevant, M.D. as a member.

The guest speaker was George W. Hallett, Jr., M.D. of Portland, Maine who had spent two months in South Vietnam treating the civilian population in a small town. Dr. Hallett gave a very interesting discussion of the problems there and of his impressions of the people. His talk was illustrated with some colorful slides.

LUCIEN F. VEILLEUX, M.D., *Secretary*

LINCOLN-SAGADAHOC

A meeting of the Lincoln-Sagadahoc County Medical Society was held at The Ledges in Wiscasset, Maine on February 21, 1967.

The meeting was called to order by the President, Charles E. Burden, M.D.

George W. Bostwick, M.D. read a letter from the Maine Medical Association asking for interested volunteers for Standing and Special Committees for the next year. He asked those who plan to volunteer for the committees to report their names at the March meeting. Dr. Bostwick circulated the attendance roster for the past three years.

The bill introduced by Senator Sproul relating to abortion was discussed; nobody was opposed. It was voted that this bill be reintroduced for general discussion at the March meeting.

Mr. Kenneth V. Schreiner, Program Director of the V. D. Control Section of the State of Maine Department of Health and Welfare, was the guest speaker. Mr. Schreiner spoke on the State's efforts to control syphilis and gonorrhea.

GEORGE W. BOSTWICK, M.D., *Secretary*

SOMERSET

Somerset County Delegates and Alternates elected to the Maine Medical Association House of Delegates for 1967:

Delegates: Drs. Richard P. Laney, Skowhegan and H. Carl Amrein, Madison. Alternates: Drs. Harland G. Turner, Norridgewock and Edgar J. Smith, Fairfield

JOHN P. DOW, M.D., *Secretary*

YORK

York County Delegates and Alternates elected to the Maine Medical Association House of Delegates for 1967:

Delegates: Drs. Carl E. Richards, Sanford, Robert F. Ficker, Kennebunkport and Thomas Anton, Biddeford. Alternates: Drs. Irvin Dorfman, Biddeford, Stephen A. Cobb, Sanford and Kenneth E. Leigh, York

CHARLES W. KINGHORN, M.D., *Secretary*

PENOBSCOT

Penobscot County Medical Association officers for 1967:

President, Jay K. Osler, M.D., Bangor
President-Elect, Leonard G. Miragliuolo, M.D., Bangor
Secretary, Charles D. McEvoy, Jr., M.D., Bangor
Treasurer, Thornton W. Merriam, Jr., M.D., Bangor
Delegates to the Maine Medical Association House of Delegates: Drs. Dexter J. Clough, 2nd, and Lloyd Brown, both of Bangor, Herbert C. Gilman, Millinocket, Russell M. Lane, Orono and John J. Pearson, Old Town. Alternates: Drs. Thornton W. Merriam, Jr., David M. Sensenig, William M. Shubert, Francis J.

Kadi, all of Bangor and John C. Bjorn, Hampden Highlands

CHARLES D. MCEVOY, JR., M.D., *Secretary*

News and Notes

Central Maine General Hospital Chemotherapy in Malignant Disease

2:00 P.M.-4:30 P.M.

April 5–*Pathology*
William Meissner, M.D.

April 12–*Solid Tumors*
Peter Mozden, M.D.

April 19–*Pharmacology and Radiation*
Thomas Hall, M.D.

April 26–*Lymphomas*
William Moloney, M.D.

May 3–*Tumors in Children*
Norman Jaffee, M.D.

May 10–*Panel Discussion: Pregnancy, Platelets, Complications*
William Moloney, M.D. and Peter Mozden, M.D.

Workshop in Clinical Hypnosis

A Workshop in Clinical Hypnosis for physicians, psychologists and dentists, sponsored by the New England Society of Clinical Hypnosis, will be held at Mallory Amphitheater, Boston City Hospital on April 6-9, 1967.

Faculty includes: Herbert Spiegel, M.D., Psychiatry Department, Columbia University College of Physicians & Surgeons; Lewis Jacobs, M.D., Pediatrician, New York University; Leo Alexander, M.D., Psychiatrist, Boston; Donald Coulton, M.D., Obstetrician and Gynecologist, Bangor, Maine; Esther Bartlett, M.D., Anesthesiologist, Quincy, Massachusetts; and Harold Golan, Dentist, Oral Surgery Department, Boston City Hospital.

Tuition: $125, including three luncheons and three dinners.

For further information contact Course Director: Lawrence M. Staples, D.M.D., 311 Commonwealth Avenue, Boston, Massachusetts 02115.

Physicians' Guide Book on "The Malignant Lymphomas"

An excellent book on "The Malignant Lymphomas" published by the American Cancer Society is available to members of the Maine Medical Association.

Any member wishing to receive a copy may do so by writing to: American Cancer Society, Maine Division, Inc., Federal Street, Brunswick, Maine 04011.

Five Day Refresher Course in Pediatrics

The Children's Hospital of Philadelphia and The Department of Pediatrics, School of Medicine, University of Pennsylvania announce a five day refresher course in pediatrics for



What can be done for Susan Jane To stop the runs and crampy pain?

Parepectolin for quick relief of acute diarrhea
...soothes colicky pain with paregoric
...consolidates fluid stools with pectin
...adsorbs irritants with kaolin, and protects intestinal mucosa.

In children, Parepectolin may be used to control diarrhea promptly and prevent dehydration, until etiology has been determined. In some cases, Parepectolin may be all the therapy necessary.

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Each fluid ounce of creamy white suspension contains:
Paregoric (equivalent)..... (1.0 dram) 3.7 ml.
Contains opium (¼ grain) 15 mg. per fluid ounce.
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Pectin (2½ grains) 162 mg.
Kaolin (specially purified).... (85 grains) 5.5 Gm.
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Usual Children's Dose: One or two teaspoonfuls three times daily.

ROER

WILLIAM H. RORER, INC.
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pediatricians and general practitioners, May 1-5, 1967.

The curriculum will consist of lectures and clinics, given by members of the Faculty Staff, in selected aspects of contemporary pediatrics in which important advances are being made. AAGP accredited for 27 hours. Tuition is $175.00.

Registration and inquiries should be sent to: Children's Hospital of Philadelphia, Post Graduate Education Committee, 1740 Banbridge Street, Philadelphia, Pa. 19146.

Make checks payable to: The Children's Hospital of Philadelphia.

"Diabetes for Diabetics"

"Diabetes for Diabetics" by George F. Schmitt, M.D., F.A.C.P., Diabetes Press of America, Inc., 30 S.E. 8th St., Miami, Florida 33131. ($5.95 Prepaid) 230 text pages, 212 full color illustrations.

This is an excellent book for diabetics and for those who treat them. It is clearly written, practical and easy to read, with diet information as well as information on insulin and oral anti-diabetic drugs; a book with reassuring attitudes on the problems that the diabetic faces in his day-to-day experiences.

PROGRESS IN CANCER CONTROL CITED IN AMERICAN CANCER SOCIETY'S ANNUAL REPORT

Continued from Page 67

medicine for Latin American physicians, with participants from 20 nations.

A special tribute was paid to the communications media by the Society's Report. A full-page montage of newspapers, magazines, radio and television scenes bore the heading: "The Media Fight Cancer." The Report gave warm acknowledgement to the key role played by these means of communication in carrying messages of life-saving potential into millions of homes across the nation, as well as in urging support for the Society itself – all free of charge.

Public support of the Society's efforts reached an alltime level of success, as the Report points out. Thus, for the first time, better than $50 million was received in total funds – $38.5 million from the Crusade itself, and $11.6 million in the form of legacies. The total marked an increase of approximately $4.5 million over that received during 1965. In large measure this may be attributable to increased participation by Americans in the work of the Society, as the Report points to an increase of some 90,000 volunteers who took part in the Crusade, compared with 1965.

For the present fiscal year, the Society has budgeted some $19 million (37 percent – the largest single amount) for research, followed by public education ($7.6 million – 15 percent), patient service ($6 million – 12 percent), and professional education ($4.5 million – 9 percent).

In looking back over the accomplishments of the year past, the Executive Vice President of the ACS, Mr. Lane W. Adams observed in the Report that they were "made possible by the partnership of volunteers and staff, physicians and laymen. They are the results of better management and leadership of the cancer control effort. But they can only be a spur to further achievement."

American Cancer Society News Service Release

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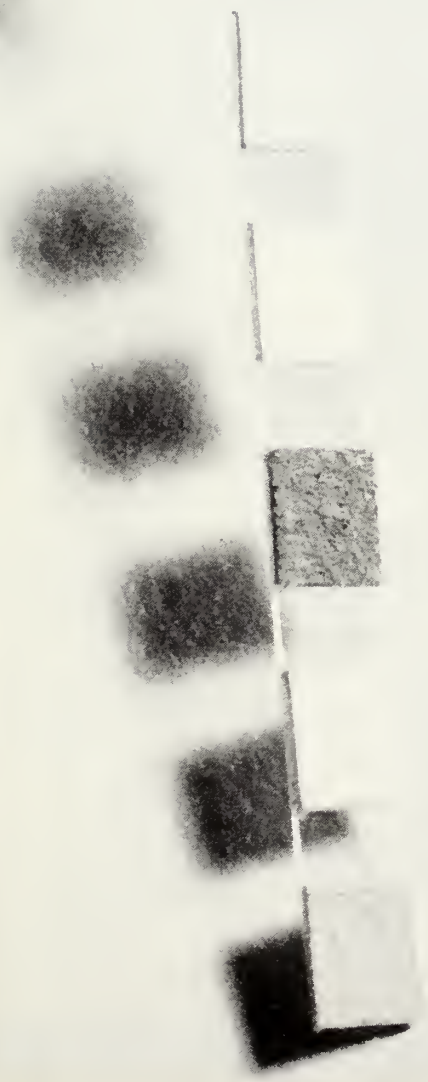
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Ketones—detects ketone bodies in urine—**both** acetoacetic acid and acetone. Reacts with as little as 5 to 10 mg. % of acetoacetic acid.

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ere is why. PARAFON FORTE provides:

nonsalicylate analgesic equal to aspirin for the relief pain,[1,2] yet unlikely to produce the irritation to the stric mucosa so often associated with salicylate erapy[3]

d a skeletal muscle relaxant shown to have up to a hour span of action,[4-6] and to retain effectiveness en on continued administration,[5-7] but which does not ve the central effects of tranquilizing compounds.

escribe PARAFON FORTE for lasting spasmolysis d analgesia in sprains, strains, myalgias, low back in, bursitis and other musculoskeletal disorders. ur patients will appreciate the restored comfort d lasting freedom of movement it usually provides.

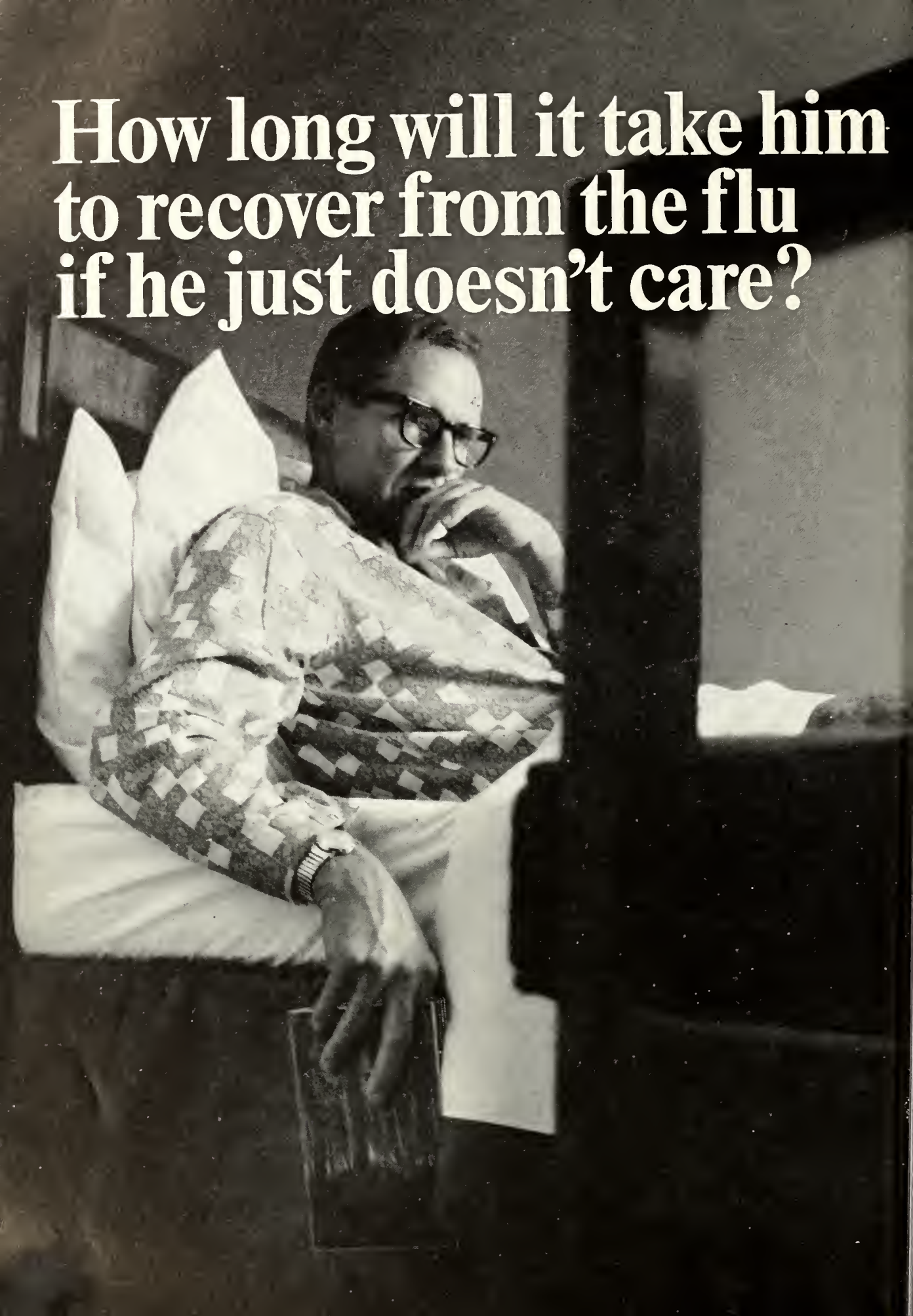
Cautions and side effects: Use with caution in patients with known drug sensitivity. If a hypersensitivity reaction or symptoms suggestive of liver dysfunction are observed, the drug should be stopped. Occasionally, drowsiness, dizziness, lightheadedness, malaise, overstimulation or gastrointestinal disturbances may be noted; rarely gastrointestinal bleeding, allergic skin rashes, petechiae, ecchymoses, angioneurotic edema or anaphylactic reactions may have been drug associated. While *Paraflex* (chlorzoxazone) has been suspected as being the cause of hepatic toxicity in approximately eighteen patients, it was not possible to state that the dysfunction was or was not drug induced. ***Dosage:*** Two tablets q.i.d. ***Supplied:*** Scored, light green tablets, imprinted "McNEIL"—bottles of 100.

References: 1. Batterman, R. C., and Grossman, A. J.: Fed. Proc. *14*:316, 1955. 2. Goodman, L. S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 3, New York, The Macmillan Company, 1965, p. 331. 3. Roth, J. L. A., *et al.*: Gastroenterology *44*:146, 1963. 4. Conney, A. H., and Burns, J. J.: J. Pharmacol. Exp. Ther. *128*:340, 1960. 5. Settel, E.: Clin. Med. *6*:1373, 1959. 6. Berman, H. H., *et al.*: Dis. Nerv. Syst. *25*:430, 1964. 7. Darienzo, C.: Ibid., *27*:189, 1966.

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Pleasant-tasting Alertonic is pipradrol hydrochloride—an effective cerebral stimulant whose gentle analeptic action helps counteract the apathy and inertia that so often delay convalescence—together with an excellent vitamin and mineral formula, in a satisfying 15% alcohol vehicle.

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Adequate dosage is important: Prescribe Alertonic—one tablespoonful t.i.d., 30 minutes before meals...tastes best chilled.

And for your patient's sake, prescribe Alertonic in the convenient, economical one-pint bottle.

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Each 45 cc. (3 tablespoonfuls) contains: alcohol, 15%; pipradrol hydrochloride, 2 mg.; thiamine hydrochloride (vitamin B_1) (10 MDR*), 10 mg.; riboflavin (vitamin B_2) (4 MDR), 5 mg.; pyridoxine hydrochloride (vitamin B_6), 1 mg.; niacinamide (5 MDR), 50 mg.; choline,† 100 mg.; inositol,† 100 mg.; calcium glycerophosphate, 100 mg. (supplies 2% MDR for calcium and for phosphorus) and 1 mg. each of the following: cobalt (as chloride), manganese (as sulfate), magnesium (as acetate), zinc (as acetate), and molybdenum (as ammonium molybdate).

*Multiple of adult Minimum Daily Requirement supplied.
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Indications: 1. Functional fatigue such as that often associated with: a depressing life experience or stressful time of life; advancing years; convalescence; limited activity or confinement. 2. Poor appetite and vitamin-mineral deficiency as they occur in: patients having faulty eating habits; geriatric patients who are losing interest in food; patients convalescing from debilitating illness or surgery.

Contraindications: As with other drugs with CNS stimulating action, Alertonic is contraindicated in hyperactive, agitated or severely anxious patients and in chorea or obsessive compulsive states.

Side effects: Reports of overstimulation have been rare. Patients who are known to be unduly sensitive to the effects of stimulant drugs should be observed carefully in the initial stages of treatment.

Dosage: Adults, 1 tablespoonful; children (over 15 years old), 1 to 2 teaspoonfuls; children (4 to 15 years old), 1 teaspoonful. To be taken three times daily 30 minutes before meals.

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Blue Shield often makes the difference between a harried homecoming and a happy one. When your patients have Blue Shield, they have the best in medical care protection. Last year, Blue Shield paid nearly $1.4 billion in doctor bills on behalf of its 53 million members.

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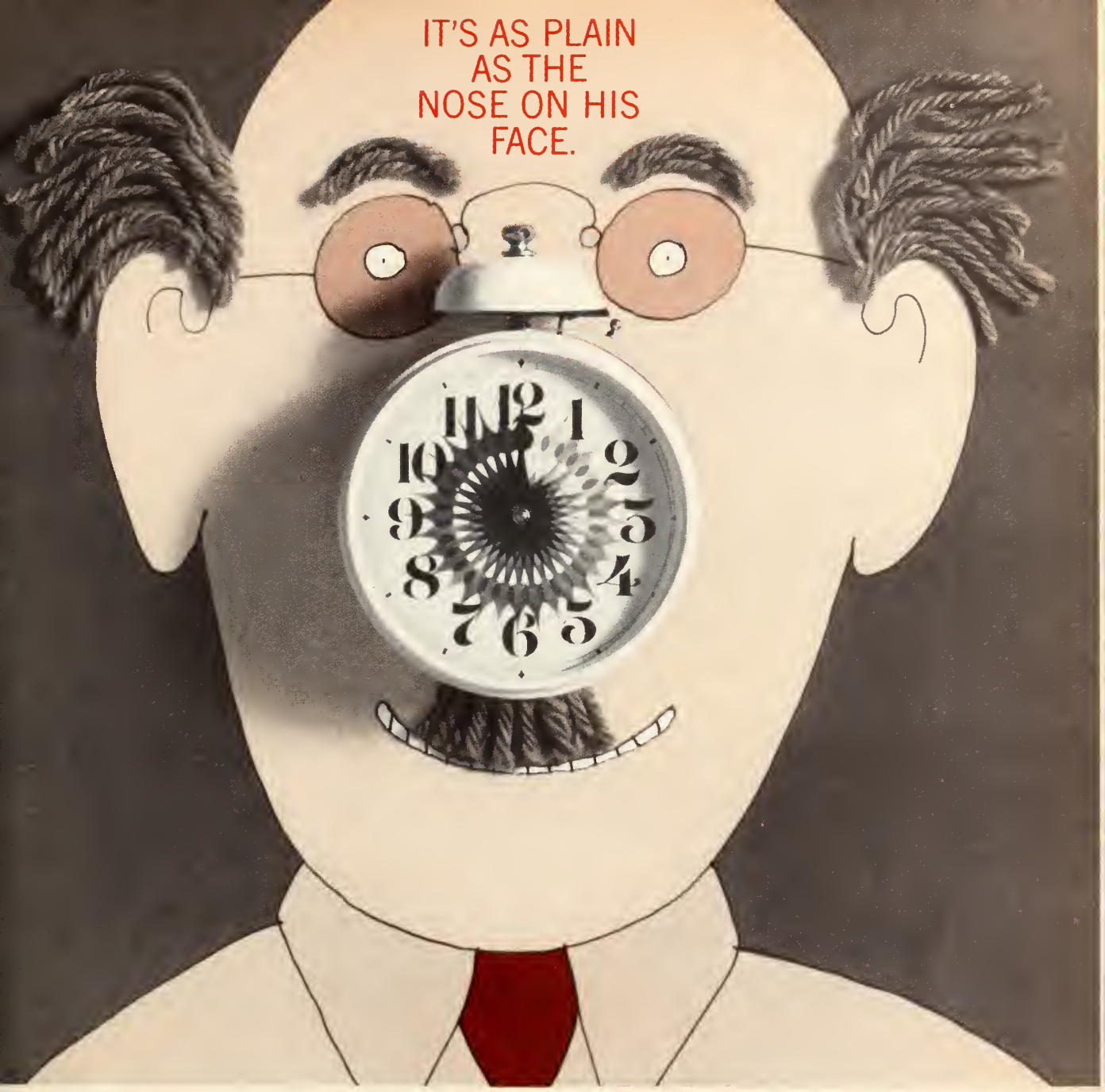
ASSOCIATED HOSPITAL SERVICE OF MAINE

509 FOREST AVENUE

PORTLAND, MAINE 04101

Recommend

With Over 800 Participating MDs



UP TO 10–12 HOURS' CLEAR BREATHING ON ONE TABLET

Dimetapp® Extentabs®

(Dimetane® [brompheniramine maleate], 12 mg.; phenylephrine HCl, 15 mg.; phenylpropanolamine HCl, 15 mg.)

sinusitis, colds, or U.R.I., netapp lets congested patients athe easy again. Each Extentab ngs welcome relief all day or all night, ually without drowsiness or over- nulation. Its key to success? The netapp formula—Dimetane (brom- eniramine maleate), a potent anti- tamine reported in one study to have lited side effects as few as the placebo,* med with decongestants phenyl- rine and phenylpropanolamine— dependable 10- to 12-hour form.

ler, I. W., and Lowell, F. C.: New England d. 261:478, 1959.

Contraindications: Patients hypersensitive to antihistamines. Not recommended for use during pregnancy.

Precautions: Until the patient's response has been determined, he should be cautioned against engaging in operations requiring alertness. Administer with care to patients with cardiac or peripheral vascular diseases or hypertension.

Side Effects: Hypersensitivity reactions including skin rashes, urticaria, hypotension and thrombocytopenia have been reported on rare occasions. Drowsiness, lassitude, nausea, giddiness, dryness of the mouth, mydriasis, increased irritability, or excitement may be encountered.

Dosage: 1 Extentab morning and evening, or as needed.

Supplied: Bottles of 100 and 500.

Also available: Dimetapp® Elixir for conventional *t.i.d.* or *q.i.d.* dosage. See package insert for further details.

A. H. ROBINS CO., INC.
RICHMOND, VIRGINIA 23220

A·H·ROBINS



Don't delegate your authority in the choice of drugs

Generic prescribing allows a third party to choose for you. This does not of necessity ensure therapeutic effectiveness or lowest patient cost.

You can prescribe the quality and purity of ACHROMYCIN® V Tetracycline-Lederle at a cost that is within pennies-a-day of the low-priced generic tetracycline.

When you prescribe tetracycline, write ACHROMYCIN V. It's good policy, good medicine and good economy, all in one prescription. LEDERLE LABORATORIES, A Division of American Cyanamid Company, Pearl River, New York.

MAJOR PRICE REDUCTION JAN. 15, 1967

ACHROMYCIN® V TETRACYCLINE-LEDERLE

Lederle

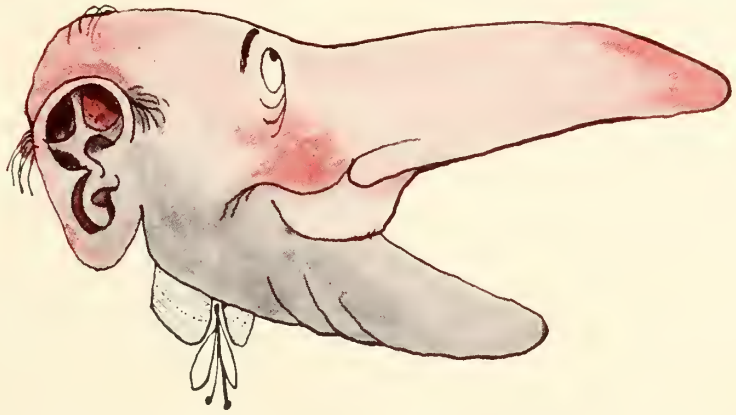
The Proof of Excellence is in the Performance

for noses of every description, one safe and sure prescription:

Otrivin®

(xylometazoline CIBA)

on Rx only







■ quickly relieves congested nose
■ action is gentle, yet prolonged
■ side effects are minimal

)DICATION: Nasal congestion. CONTRAINDICATION: Do not use patients sensitive to small doses of sympathomimetic substances. 'ARNINGS: Prolonged or excessive use may cause rebound congesɔn. Use cautiously in patients with hyperthyroidism, coronary artery sease, hypertension, and diabetes. CAUTION: Do not shake Nasal ɔray. Rinse Nasal Solution dropper or Nasal Spray tip in hot water ter each use. No more than one person should use the same dropper ɔttle or nasal spray.

DE EFFECTS: Occasional local reactions: rebound congestion, ght burning or stinging, sneezing, dry nose. Occasional systemic fects: headache, drowsiness, lightheadedness, insomnia, palpitaɔns. Overdosage in young children may produce profound sedation. OSAGE: **Adults:** *Nasal Solution*—2 or 3 drops in each nostril every to 6 hours. *Nasal Spray*—Squeeze rapidly once or twice in each nosl every 4 to 6 hours. **Children under 12:** *Pediatric Nasal Solution*—ɔr 3 drops in each nostril every 4 to 6 hours. One drop should be used in infants under 6 months. *Pediatric Nasal Spray*—Squeeze rapidly once in each nostril holding tube upright; repeat every 4 hours as necessary. SUPPLIED: OTRIVIN® hydrochloride (xylometazoline hydrochloride CIBA) *Nasal Solution*, 0.1%; dropper bottles of 1 fluidounce, bottles of 1 pint. *Nasal Spray*, 0.1%; plastic squeeze tubes of 15 ml. *Pediatric Nasal Solution*, 0.05%; dropper bottles of 1 fluidounce. *Pediatric Nasal Spray*, 0.05%; plastic squeeze tubes of 15 ml. *Nasal Solutions* contain either 0.1% or 0.05% xylometazoline hydrochloride, triethanolamine, hydrochloric acid, sodium chloride, and phenylmercuric acetate 1:50,000 as preservative in water. *Nasal Sprays* contain either 0.1% or 0.05% xylometazoline hydrochloride, potassium phosphate monobasic, potassium chloride, sodium phosphate dibasic, sodium chloride, and benzalkonium chloride 1:5000 as preservative in water. *Consult complete literature before prescribing.*

CIBA Pharmaceutical Company, Summit, N. J.

CIBA

2/3329 MKL-1


Do your patients
shell out too much
for a diuretic?

Worldwide clinical experience confirms the predictable therapeutic potential of Synalar

It is particularly gratifying that the promise of the advanced chemical design and high order of bioassay activity of Synalar (fluocinolone acetonide) has been confirmed by widespread therapeutic application. Indeed, the impressive clinical response rate of Synalar has been documented in no fewer than 232 papers from 22 countries.

Representative Clinical Results with Synalar*

Efficacy Documented in over 4,000 Patients

Condition	Number of Publications	Number of Patients	Significant Improvement†
Contact Dermatitis	27	750	713
Eczematous Dermatitis	21	472	409
Seborrheic Dermatitis	18	442	426
Atopic Dermatitis	24	460	426
Psoriasis	36	1,699	1,510
Neurodermatitis	18	351	324
Total	144	4,174	3,808

*Complete bibliography on request.

†Expressed by the authors as excellent, very good, good, complete remission of inflammation, etc.

PRESCRIBING INFORMATION

For initiation of therapy: Cream 0.025%, 5 and 15 Gm. tubes, 425 Gm. jars; *for emollient effect:* Ointment 0.025%, 15 Gm. tubes; *for maintenance therapy:* Cream 0.01%, 15 and 45 Gm. tubes, 120 Gm. jars; *for intertriginous or hairy sites:* Solution 0.01%, 20 cc. and 60 cc. plastic squeeze bottles; *for infected inflammatory dermatoses:* Neo-Synalar® Cream (0.025% fluocinolone acetonide, neomycin sulfate, equivalent to 0.35% neomycin base), 5 and 15 Gm. tubes.

CONTRAINDICATIONS: Tuberculous, fungal, and most viral lesions of the skin, (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of the components. PRECAUTIONS: Synalar preparations are virtually nonsensitizing and nonirritating. However, the solution may produce burning or stinging when applied to denuded or fissured areas. In some patients with dry lesions, the solution may increase dryness, scaling or itching. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. Prolonged use of any antibiotic may result in overgrowth of nonsusceptible organisms; if this occurs, appropriate therapy should be instituted. When severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. SIDE EFFECTS: Side effects are not ordinarily encountered with topically applied corticosteroids. As with all drugs, however, a few patients may react unfavorably to Synalar under certain conditions. The neomycin in Neo-Synalar Cream rarely produces allergic reactions.

REFERENCES: 1. Lerner, L. J., Bianchi, A., Turkheimer, A. R., Singer, F. M., and Borman, A.: Anti-inflammatory steroids: potency, duration and modification of activities. Ann NY Acad Sci 116:1071 (Aug. 27) 1964. 2. Idem: Comparison of anti-granuloma, thymolytic and glucocorticoid activities of anti-inflammatory steroids. Proc Soc Exp Biol Med 116:385 (June) 1964. 3. Ringler, A.: Activities of adrenocorticosteroids in experimental animals and man, in Dorfman, R. I.: Methods of hormone research, New York, Academic Press, 1964. vol. III. pp. 234-280. 4. Gubersky, V. R.: To be published.

fluocinolone acetonide — an original steroid from

SYNTEX LABORATORIES INC., PALO ALTO, CALIF.

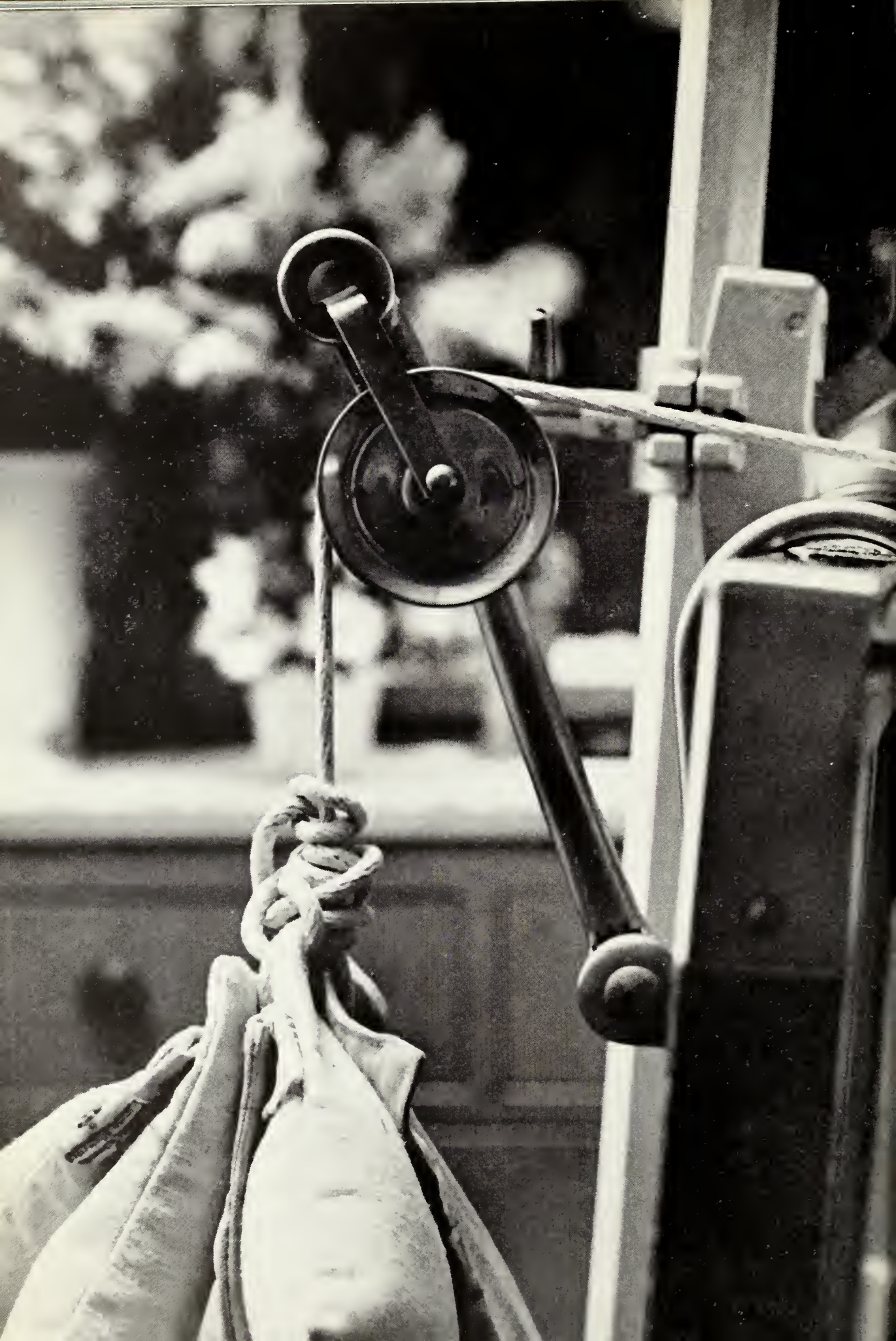
For inflammatory dermatoses... by any measure a topical corticosteroid of choice

Synalar® (fluocinolone acetonide)

Milligram for milligram one of the most active topical corticosteroids available

Rapid and predictable in antiinflammatory and antipruritic activity

Results often comparable to those of systemic corticosteroids with fewer hazards





TABLETS

Equagesic®

(meprobamate and ethoheptazine citrate with aspirin)

Wyeth®

Precautions: Keep out of reach of children. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use of meprobamate may result in dependence or habituation in susceptible persons—as ex-addicts, alcoholics, severe psychoneurotics. Withdraw gradually after prolonged high dosage to avoid possibly severe withdrawal reactions including epileptiform seizures. Warn patients of possible reduced alcohol tolerance. If drowsiness, ataxia or visual disturbances occur, reduce dose. If symptoms persist, caution patients against operating machinery or driving. Give cautiously to patients with suicidal tendencies. Treat attempted suicide with immediate gastric lavage and appropriate supportive therapy

Side Effects: Ethoheptazine and aspirin may occasionally cause nausea, vomiting, epigastric distress, and rarely dizziness and CNS depression. Overdosage may result in salicylate intoxication. Meprobamate rarely causes allergic or idiosyncratic reactions. These reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Mild reactions are characterized by urticarial or erythematous maculopapular rash. Acute nonthrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever have been reported. Meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioedema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. A few cases of leukopenia, usually transient, have been reported following prolonged dosage. Rarely, cases of aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis, and hemolytic anemia have been reported; almost always, in the presence of known toxic agents.

Contraindications: History of sensitivity or severe intolerance to aspirin or meprobamate.

Composition: 150 mg. meprobamate, 75 mg. ethoheptazine citrate and 250 mg. aspirin per tablet.

Wyeth Laboratories Philadelphia, Pa.

Weighing on his mind, too

When pain evokes anxiety and tension, thereby heightening patient discomfort, a simple analgesic may only touch on part of the problem.

This single-prescription, nonnarcotic product, however, usually provides effective analgesia *and* helps put the patient's mind at ease.

In peptic ulcer... antacid therapy with a new benefit



CONTAINS A BALANCED COMBINATION OF THE MOST WIDELY USED ANTACIDS— FOR RAPID NEUTRALIZATION. PLUS SIMETHICONE— TO CONTROL THE FACTOR WHICH ANTACIDS ALONE CANNOT INFLUENCE.

Mylanta®

- In Mylanta, aluminum and magnesium hydroxides are balanced to minimize the chance of constipation or laxation and still achieve rapid acid neutralization and pain relief.
- The positive action of simethicone helps relieve the painful gas symptoms which often accompany the peptic ulcer syndrome.
- The nonfatiguing flavor and smooth, nongritty consistency of tablets and liquid encourage continued patient cooperation during long-term therapy.

Composition: Each Mylanta chewable tablet or teaspoonful (5 ml.) of liquid contains: magnesium hydroxide, 200 mg.; aluminum hydroxide, dried gel, 200 mg.; simethicone, 20 mg. **Dosage:** one or two tablets, well chewed or allowed to dissolve in the mouth, or one or two teaspoonfuls of liquid to be taken between meals and at bedtime.

The Stuart Company, Pasadena, California
Division of Atlas Chemical Industries, Inc.

Stuart

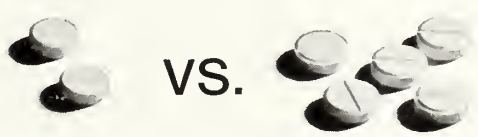
The answer may be yes... if they're not on Hygroton. For instance, a therapeutic dose of a short-acting diuretic may cost 3 times as much as an equivalent dose of Hygroton. With Hygroton, in fact, you can usually do the job with just one tablet a day or one every other day. It's no wonder that the trend has been away from short-acting, multiple-dose, high-cost diuretics.

You may hear that a short-acting diuretic was more effective in a 400 mg. (ten-tablet) dose than Hygroton in a 200 mg. (two-tablet) dose.

If one considers maximum recommended doses for each product, tablet for tablet Hygroton was clearly superior. Two tablets of Hygroton were found to produce almost 40% more natruresis and 20% more weight loss than five tablets of the other diuretic.* Note that these are maximum recommended doses!

For effectiveness, economy, and convenience, therefore, Hygroton is the diuretic to choose to start with and the one to stay with.

*Brest, A. N., et al.: J. New Drugs 5:329, 1965.



Natruresis above control values after maximum recommended doses (mEq./24 hours) in "normal" patients

111	152
5 tablets short-acting nonthiazide diuretic	2 tablets Hygroton

48-hour weight loss after maximum recommended doses in edematous patients with congestive heart failure due to arteriosclerotic or rheumatic heart disease

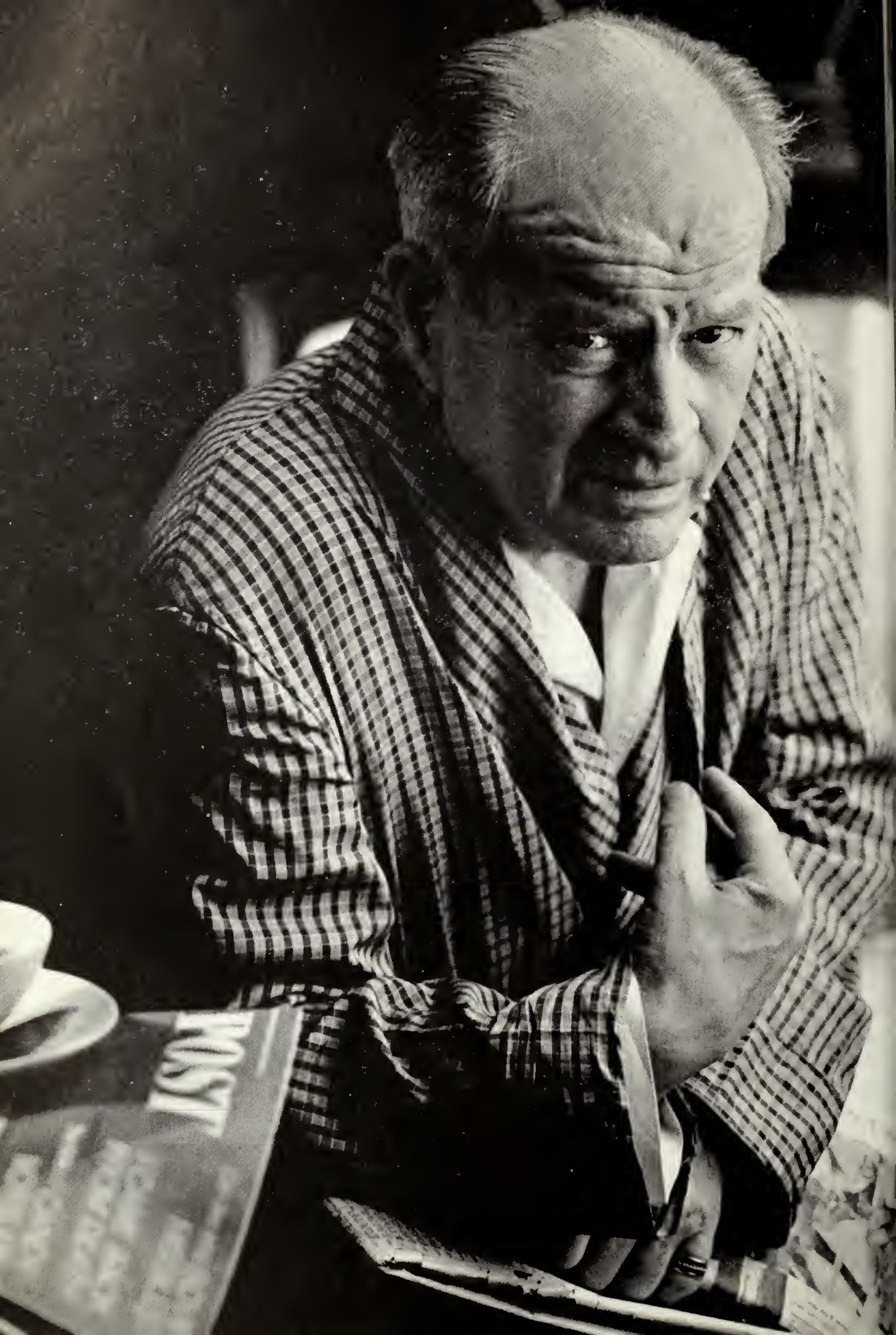
1.84 lbs.	2.2 lbs.
5 tablets short-acting nonthiazide diuretic	2 tablets Hygroton

Indications: Hypertension and many types of edema involving retention of salt and water.
Contraindications: Hypersensitivity and most cases of severe renal or hepatic disease.
Warning: With administration of enteric-coated potassium supplements, the possibility of small bowel lesions should be kept in mind.
Precautions: Reduce dosage of concomitant antihypertensive agents by at least one-half. Discontinue if the BUN rises or liver dysfunction is aggravated. Electrolyte imbalance and potassium depletion may occur; take special care in cirrhosis or severe ischemic heart disease, and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended.
Side Effects: Dizziness, weakness, nausea, vomiting, hyperglycemia, hyperuricemia, headache, muscle cramps, postural hypotension, constipation, leukopenia, thrombocytopenia, agranulocytosis, impotence, dysuria, transient myopia, skin reactions, including urticaria and purpura, epigastric pain, or G.I. symptoms after prolonged administration.
Average Dosage: One tablet (100 mg.) with breakfast daily or every other day.
Availability: Tablets of 100 mg. in bottles of 100 and 1000.
For full details, see the complete prescribing information.
6524-V(B)

HY-4736S

Hygroton®
chlorthalidone

Geigy
Geigy Pharmaceuticals
Division of
Geigy Chemical Corporation
Ardsley, New York





Posed by professional model

I'm supposed to get up and do things?

With my heart?

It's entirely natural—and may even be desirable—for the cardiovascular patient to be somewhat anxious about himself.

But when anxiety leads to unreasonable self-imposed limitations and restrictions . . . when it aggravates cardiovascular symptoms . . . when it interferes with restful sleep, measures to help alleviate the anxiety are probably in order.

One measure, of course, is reassurance. Another, adjunctive measure, is EQUANIL (meprobamate).

Over a decade of experience has shown that EQUANIL (meprobamate) is generally well tolerated as well as effective. Side effects are usually limited to transient drowsiness; serious, therapy-interrupting side effects are rare.

Cautions: Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use may result in dependence or habituation in susceptible persons—as ex-addicts, alcoholics, severe psychoneurotics. After prolonged high dosage, drug should be withdrawn gradually to avoid possibly severe withdrawal reactions including epileptiform seizures. Side effects include drowsiness and, rarely, allergic or idiosyncratic reactions. These reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Mild reactions are characterized by urticarial or erythematous maculopapular rash. Acute non-thrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever have been reported. Meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Warn patients of possible reduced alcohol tolerance. Should drowsiness, ataxia, or visual disturbances occur, dose should be reduced. If symptoms persist, patients should not operate vehicles or dangerous machinery. A few cases of leukopenia, usually transient, have been reported following prolonged dosage. Other blood dyscrasias—aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis and hemolytic anemia—have occurred rarely, almost always in the presence of known toxic agents. One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. Prescribe very cautiously for patients with suicidal tendencies. Suicidal attempts should be treated with immediate gastric lavage and appropriate supportive therapy.

Contraindications: History of sensitivity to meprobamate.

Composition: Tablets, 200 mg. and 400 mg. meprobamate. Coated Tablets, WYSEALS® EQUANIL (meprobamate) 400 mg. Continuous-Release Capsules, EQUANIL L-A (meprobamate) 400 mg.

American Hospital Formulary Service Category No. 28:16.08

A quality controlled product of
Wyeth Laboratories Philadelphia, Pa.

to help relieve anxiety and tension occurring alone or secondary to organic disease

Equanil® (meprobamate)

Wyeth® SERVICE TO MEDICINE

Norinyl® tablets

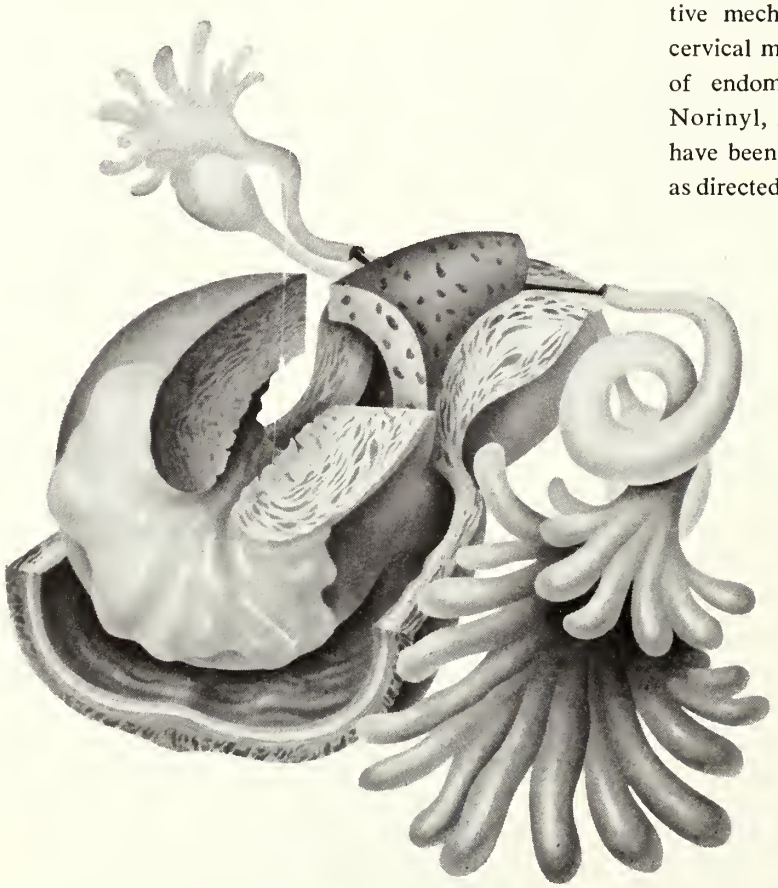
(norethindrone 2 mg. ± mestranol 0.1 mg.)

for multiple contraceptive action that has produced a record of unexcelled effectiveness

inhibition of ovulation by means of 2 time-proved hormonal agents

production of a cervical mucus hostile to sperm motility and vitality

creation of an endometrium unreceptive to egg implantation



no unplanned pregnancies

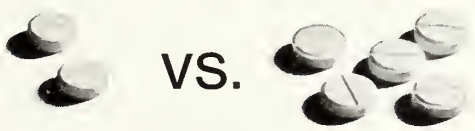
Norinyl provides multiple action for maximum assurance of success. It does not depend on ovulation inhibition alone for contraceptive effectiveness. The mechanism of action of combined hormonal therapy results in ovulation inhibition reinforced by other protective mechanisms, including a hostile cervical mucus[1-13] and an acceleration of endometrial changes.[1-3,7-16] With Norinyl, no unplanned pregnancies have been reported to date when used as directed.

The answer may be yes... if they're not on Hygroton. For instance, a therapeutic dose of a short-acting diuretic may cost 3 times as much as an equivalent dose of Hygroton. With Hygroton, in fact, you can usually do the job with just one tablet a day or one every other day. It's no wonder that the trend has been away from short-acting, multiple-dose, high-cost diuretics.

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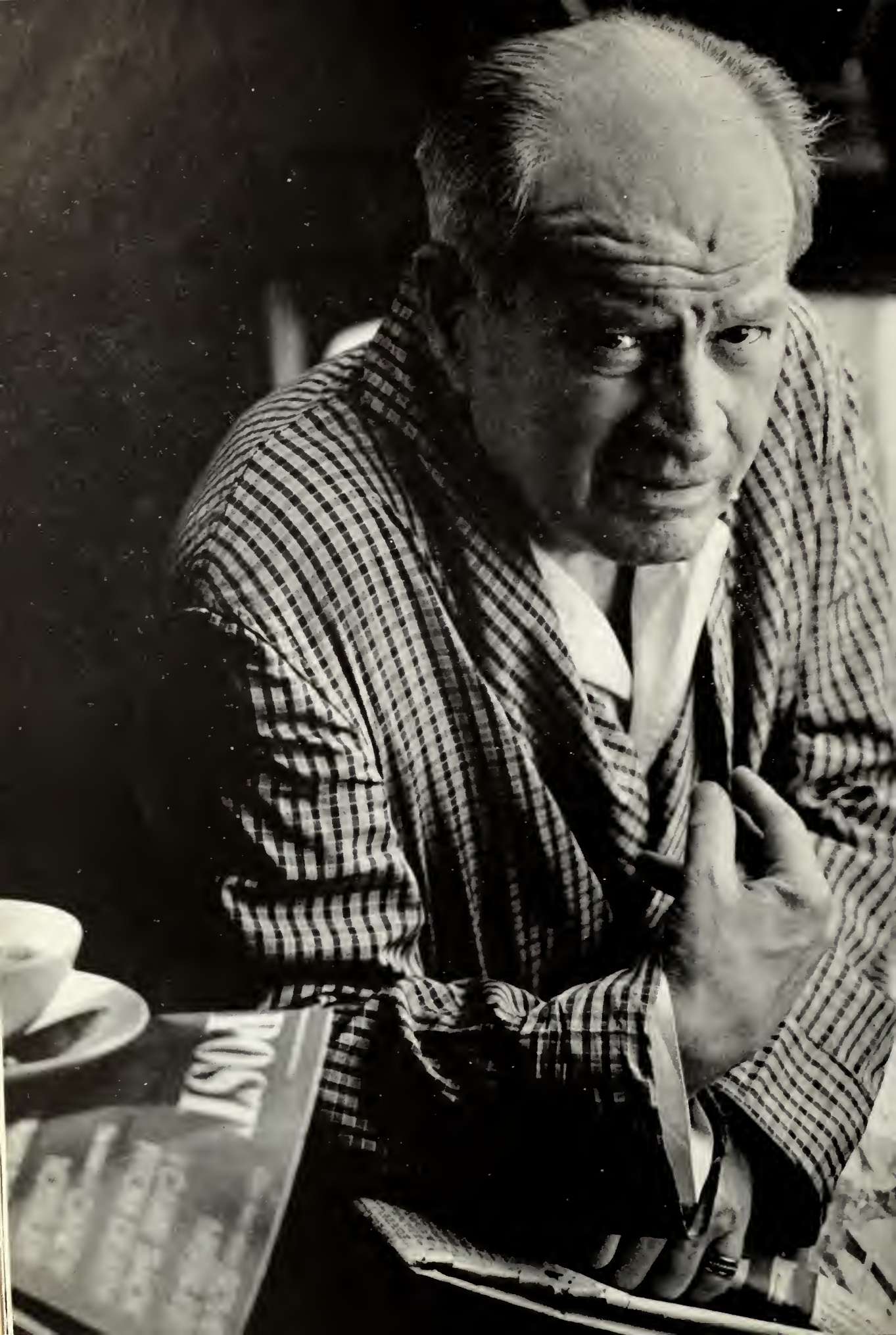
Indications: Hypertension and many types of edema involving retention of salt and water.
Contraindications: Hypersensitivity and most cases of severe renal or hepatic disease.
Warning: With administration of enteric-coated potassium supplements, the possibility of small bowel lesions should be kept in mind.
Precautions: Reduce dosage of concomitant antihypertensive agents by at least one-half. Discontinue if the BUN rises or liver dysfunction is aggravated. Electrolyte imbalance and potassium depletion may occur; take special care in cirrhosis or severe ischemic heart disease, and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended.
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chlorthalidone

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Posed by professional model

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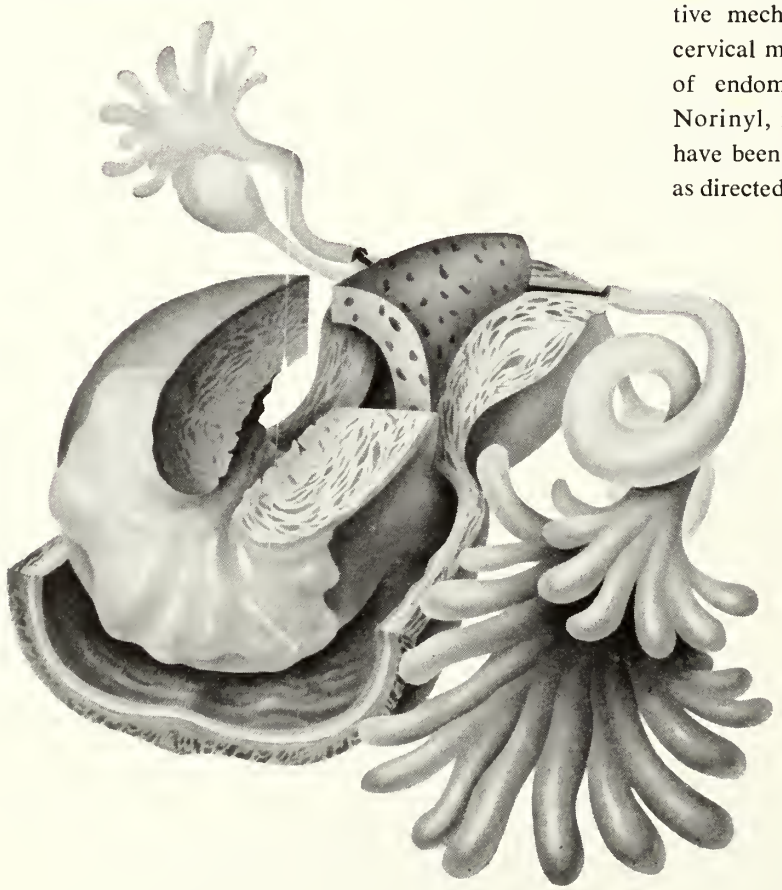
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plus important supportive benefits that help her through those critical early months of oral contraception

low incidence of side effects

Low incidence of BTB and spotting, nausea and amenorrhea tends to minimize side effect problems and increases patient cooperation.

no confusion about dosage

An unbreakable "confusionproof" package makes it easy to adhere to prescribed dosage schedule: individually sealed tablets numbered from 1 through 20 *plus* monthly calendar record enables patient to double-check dosage intake by day and corresponding tablet number.



Contraindications: Thrombophlebitis or pulmonary embolism (current or past). Existing evidence does not support a causal relationship between use of Norinyl and development of thromboembolism. While a study which was conducted does not resolve definitively the possible etiologic relationship between progestational agents and intravascular clotting, it tends to confirm the findings of the Ad Hoc Advisory Committee appointed by the Food and Drug Administration to review this possibility. Cardiac, renal or hepatic dysfunction. Carcinoma of the breast or genital tract. Patients with a history of psychic depression should be carefully studied and the drug discontinued if depression recurs to marked degree. Patients with a history of cerebral vascular accident.

Warning: Discontinue medication pending examination if there is sudden partial or complete loss of vision, or if there is a sudden onset of proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn.

Precautions: By May 1963, experience with norethindrone 2 mg.– mestranol 0.1 mg. had extended over 24 months. Through miscalculation, omission or error in taking the recommended dosage of Norinyl, pregnancy may result. If regular menses fail to appear and treatment schedule has not been adhered to, or if patient misses two menstrual periods, possibility of pregnancy should be resolved before resuming Norinyl. If pregnancy is established, Norinyl should be discontinued during period of gestation since virilization of the female fetus has been reported with oral use of progestational agents or estrogen. When lactation is desired, withhold Norinyl until nursing needs are established. Existing uterine fibroids may increase in size. In metabolic or endocrine disorders, careful clinical preevaluation is indicated. A few patients without evidence of hyperthyroidism had elevated serum protein-bound iodine levels, which in the light of present knowledge, does not necessarily imply hyperthyroidism. Protein-bound iodine increased following estrogen administration. Bromsulphalein retention has occurred in up to 25% of patients without evidence of hepatic dysfunction. Studies from 24-hour urine collections have shown an increase in aldosterone and 17-ketosteroids and decrease in 17-hydroxycorticoid levels. Thus, Norinyl should be discontinued prior to and during thyroid, liver or adrenal function tests. Because progestational agents may cause fluid retention, conditions such as epilepsy, migraine and asthma require careful observation. Thus far no deleterious effect on pituitary, ovarian or adrenal function has been noted; however, long-range possible effect on these and other organs must await more prolonged observation. Norinyl should be used with caution in patients with bone, renal or any disease involving calcium or phosphorus metabolism.

Side Effects: Intermenstrual bleeding; amenorrhea; symptoms resembling early pregnancy, such as nausea, breast engorgement or enlargement, chloasma and minor degree of fluid retention (if these should occur and patient has not strictly adhered to medication plan, she should be tested for pregnancy); weight gain; subjective complaints such as headache, dizziness, nervousness, irritability; in a few patients libido was increased. In a total of 3,090 patients, 2.2% discontinued medication because of nausea.

NOTE: See sections on contraindications and precautions for possible side effects on other organ systems.

Dosage and Administration: One Norinyl tablet orally for 20 days, commencing on day 5 through and including day 24 of the menstrual cycle. (Day 1 is the first day of menstrual bleeding.)

Availability: Dispensers of 20 and 60 tablets; bottles of 100.

References: 1. Council on Drugs. JAMA 187:664 (Feb. 29) 1964. 2. Bryans, F. E.: Canad Med Ass J 92:287 (Feb. 6) 1965. 3. Goldzieher, J. W.: Med Clin N Amer 48:529 (Mar.) 1964. 4. Cohen, M. R.: Paper presented at Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965. Reported in Med Sci 16:26 (Nov.) 1965. 5. Hammond, O. O.: Ibid. 6. Rice-Wray, E., Goldzieher, J. W., and Aranda-Rosell, A.: Fertil Steril 14:402 (Jul.-Aug.) 1963. 7. Goldzieher, J. W., Moses, L. E., and Ellis, L. T.: JAMA 180:359 (May 5) 1962. 8. Kempers, R. D.: GP 29:88 (Jan.) 1964. 9. Tyler, E. T.: JAMA 187:562 (Feb. 22) 1964. 10. Rudel, H. W., Martinez-Manautou, J., and Maqueo-Topete, M.: Fertil Steril 16:158 (Mar.-Apr.) 1965. 11. Flowers, C. E., Jr.: N Carolina Med J 25:139 (Apr.) 1964. 12. Goldzieher, J. W.: Appl Ther 6:503 (June) 1964. 13. The Control of Fertility. Report adopted by the Committee on Human Reproduction of the American Medical Association. JAMA 194:462 (Oct. 25) 1965. 14. Flowers, C. E., Jr.: JAMA 188:1115 (June 29) 1964. 15. Merritt, R. I.: Appl Ther 6:427 (May) 1964. 16. Newland, O. O.: Paper presented at Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965. Reported in Med Sci 16:26 (Nov.) 1965.

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SYNTEX

LABORATORIES INC., PALO ALTO, CALIF.

Norinyl® tablets

(norethindrone 2 mg. ē mestranol 0.1 mg.)

for multiple contraceptive action



"George wants to know if it's okay to take his cold medicine now, Doctor, instead of seven o'clock?"

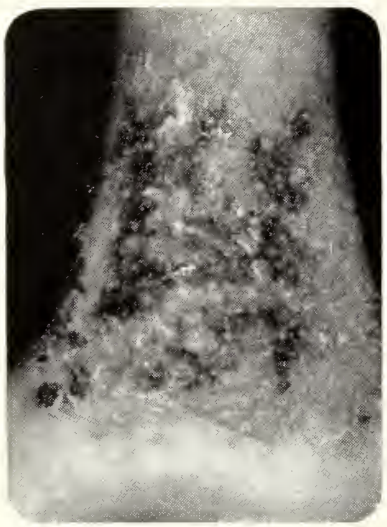


The long-continued action of Novahistine LP should help you both get a good night's sleep. Two tablets in the morning and two in the evening will usually provide round-the-clock relief by helping clear congested air passages for freer breathing. Novahistine LP also helps restore normal mucus secretion and ciliary activity—normal physiologic defenses against infection of the respiratory tract. Use cautiously in individuals with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution ambulatory patients that drowsiness may result. Each Novahistine LP tablet contains: phenylephrine hydrochloride, 25 mg., and chlorpheniramine maleate, 4 mg.

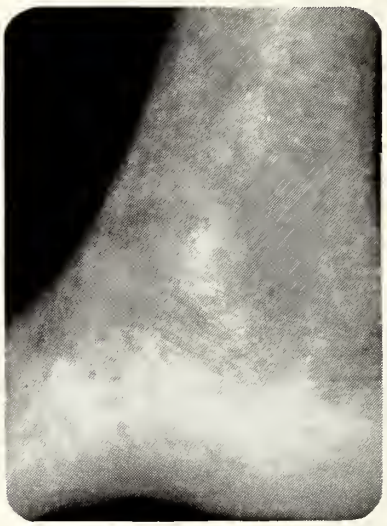
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DOW **PITMAN-MOORE** Division of The Dow Chemical Company, Indianapolis

Eczema of many years... controlled in two weeks



Before treatment



After treatment — with ARISTOCORT Topical Ointment 0.1% for two weeks

ARISTOCORT® Triamcinolone Acetonide Topicals have proved exceptionally effective in the control of various forms of eczema: allergic, atopic, nummular, psoriatic, and mycotic.

In most cases responsive to topical ARISTOCORT, the 0.1% concentration is sufficiently potent. The 0.5% concentration provides enhanced topical activity for patients requiring additional potency for proper relief.

Administration and Dosage: Apply sparingly to the affected area 3 or 4 times daily. Some cases of psoriasis may be more effectively treated if the 0.1% Cream or Ointment is applied under an occlusive dressing.

Contraindications: Tuberculosis of the skin, herpes simplex, chicken pox and vaccinia.

Precautions and Side Effects: Do not use in the eyes or in the ear (if drum is perforated). A few individuals react unfavorably under certain conditions. If side effects are encountered, the drug should be discontinued and appropriate measures taken. Use on infected areas should be attended with caution and observation, bearing in mind the potential spreading of infection and the advisability of discontinuing therapy and/or initiating antibacterial measures. Generalized dermatological conditions may require systemic corticosteroid therapy. Steroid therapy, although responsible for remissions of dermatoses, especially of allergic origin cannot be expected to prevent recurrence. The use over extensive body areas, with or without occlusive nonpermeable dressings, may result in systemic absorption. Appropriate precautions should be taken. When occlusive nonpermeable dressings are used, miliaria, folliculitis and pyodermas will sometimes develop. Localized atrophy and striae have been reported with the use of steroids by the occlusive technique. When occlusive nonpermeable dressings are used, the physician should be aware of the hazards of suffocation and flammability. The safety of use on pregnant patients has not been firmly established. Thus, do not use in large amounts or for long periods of time on pregnant patients.

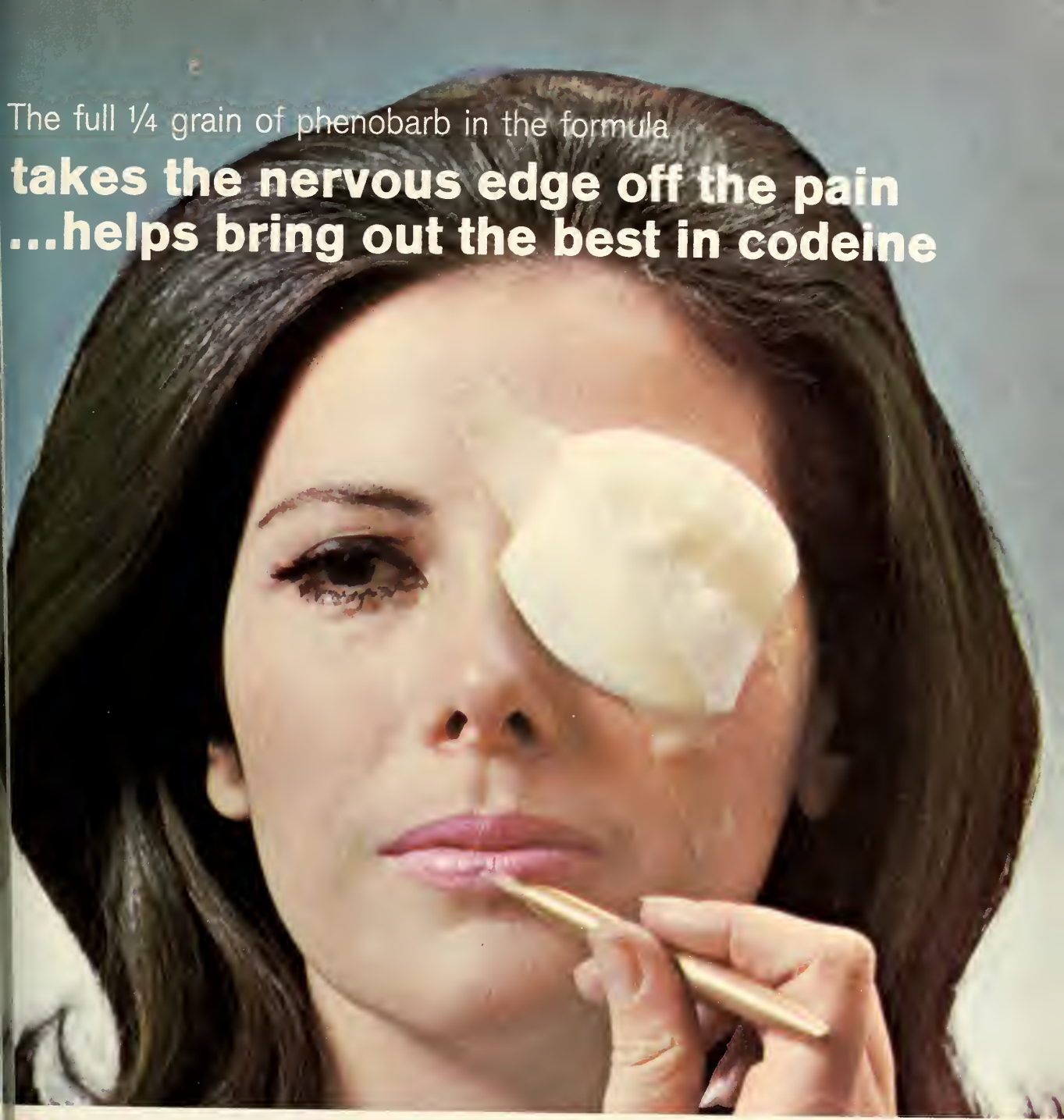
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Aristocort® Topical Ointment 0.1% and Cream 0.1%, 0.5%
Triamcinolone Acetonide
Also available in foam form.

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The full ¼ grain of phenobarb in the formula

takes the nervous edge off the pain ...helps bring out the best in codeine

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Phenobarbital (¼ gr.) 16.2 mg.
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Aspirin (2½ gr.) 162.0 mg.
Phenacetin (3 gr.) 194.0 mg.
Hyoscyamine sulfate 0.031 mg.
Codeine phosphate.....¼ gr. (No. 2), ½ gr. (No. 3), 1 gr. (No. 4)
(Warning: may be habit forming)

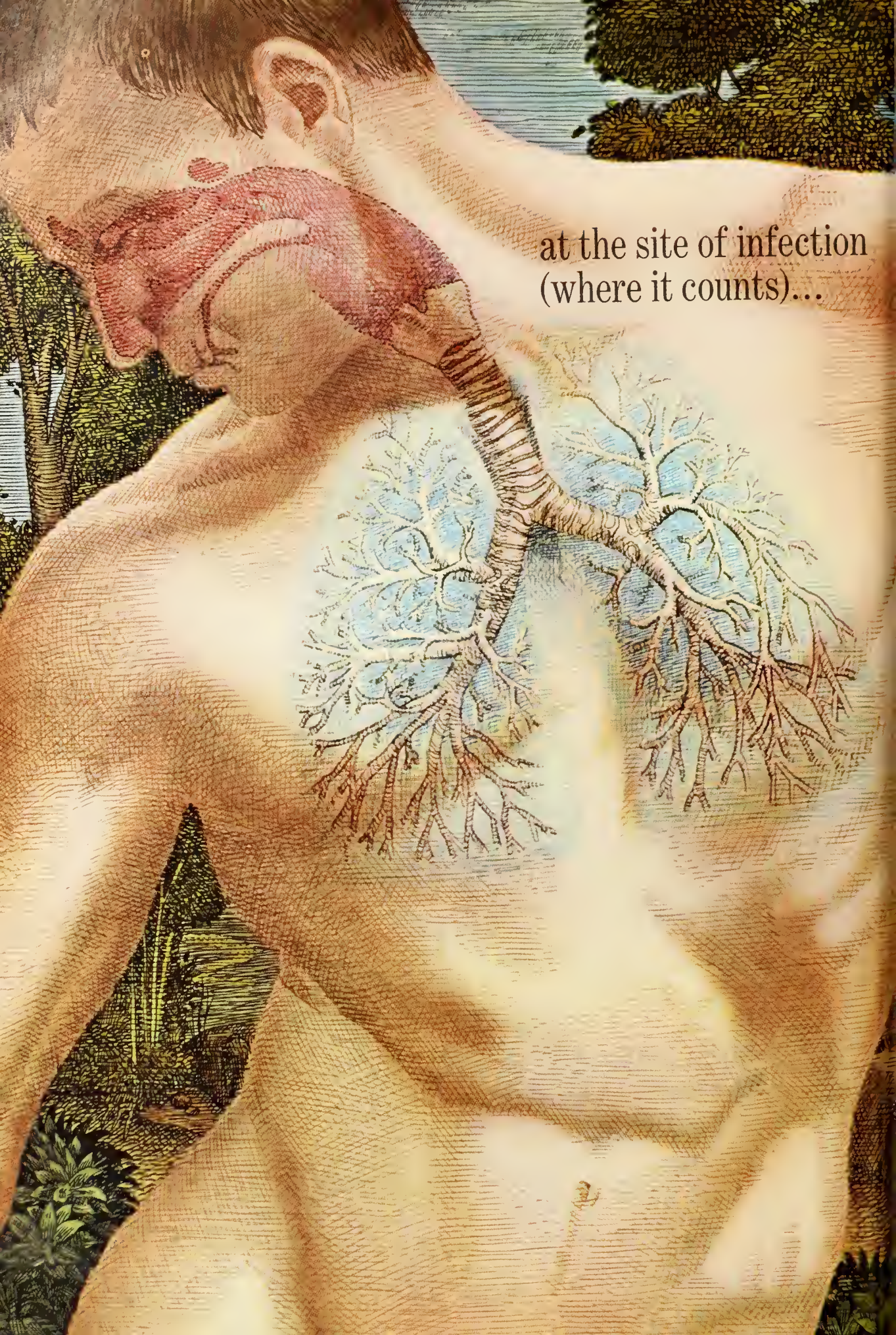
Contraindications: Hypersensitivity to any ingredient.

Precautions: As with all phenacetin-containing products, avoid excessive or prolonged use.

Side Effects: Side effects are uncommon—nausea, constipation, and drowsiness have been reported.

A. H. ROBINS CO., INC., Richmond, Va. 23220

A·H·ROBINS


at the site of infection
(where it counts)....

Ilosone® provides more antibacterial activity than any other oral erythromycin

Acid stable, better absorbed... Ilosone produces faster, higher, more prolonged blood levels, even in the presence of food[1-3]

Because it is the most active form of oral erythromycin, Ilosone can help assure consistently greater antibacterial activity at the site of infection. Ilosone produces peak antibacterial blood levels two to four times those of other erythromycin preparations.[1,2] Not only are these levels attained earlier, but they are maintained for much longer periods. Even the presence of food does not seem to affect the activity of Ilosone.[1,3]

In the treatment of patients with bacterial infections susceptible to erythromycin, Ilosone has compiled an excellent therapeutic record. Since it exerts its greatest activity against gram-positive organisms, it is particularly useful in common respiratory and soft-tissue bacterial infections. Ilosone kills—not merely inhibits—streptococci, pneumococci, and more strains of staphylococci than any other macrolide antibiotic. This bactericidal action, coupled with the high antibacterial levels attained, makes Ilosone especially valuable in patients with low host resistance, such as infants, debilitated individuals, and diabetics.

Ilosone has shown no cross-resistance with penicillin and may be effective against organisms that have become resistant to that agent. Despite its high antibacterial activity, Ilosone has demonstrated a low incidence of side reactions. Blood dyscrasias, ototoxicity, and tooth staining have not been observed. Infrequent cases of drug idiosyncrasy, manifested by a cholestatic jaundice, have occurred, but there have been no known definite residual effects.

700121

Ilosone®

Lilly

Erythromycin Estolate

(See next page for prescribing information.)

Ilosone®/ the most active oral form of erythromycin

Description: Ilosone is the most active form of oral erythromycin that has been developed. Because it is stable in acid, well absorbed, and excreted in lesser amounts in the bile, it provides faster, higher, and longer-lasting levels of antibacterial activity (ABA) in the serum, even when taken with food, than do comparable doses of erythromycin.

Indications: Ilosone is indicated in infections caused by microorganisms sensitive to its action (especially staphylococci, hemolytic streptococci, and pneumococci). The drug is therefore useful in a high proportion of bacterial diseases encountered in clinical practice and particularly in the treatment of bacterial infections of the upper and lower respiratory tract and soft tissues.

In the treatment of acute bacterial pharyngitis and tonsillitis, this antibiotic has promptly eradicated the bacteria (streptococci) and has produced a parallel prompt clinical improvement. There have been no group A beta-hemolytic streptococci resistant to this preparation. In beta-hemolytic streptococcus infections, treatment should be maintained for ten days to prevent the development of rheumatic fever or glomerulonephritis.

Erythromycin estolate has proved to be very effective in pneumococcus pneumonia and in acute bronchitis with pneumococci on culture. Bronchopneumonia and otitis media in children have responded well to its use.

The antibiotic has been used very successfully in staphylococcus infections. Good therapeutic results have been obtained in soft-tissue infections, abscesses, cellulitis, carbuncles, wound infections, and furunculosis.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents. As is the case with any treatment regimen used in these severe conditions, surgical procedures should be performed when indicated, and large dosages of the antimicrobial agents should be employed. In this fashion, Ilosone has been effective in staphylococcus pneumonia, osteomyelitis, septicemia, empyema, and meningitis.

Multiple 500-mg. doses of the drug have been useful in gonorrhea and syphilis. Since penicillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with preexisting liver disease or dysfunction.

Side-Effects: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have appeared in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly if the drug is readministered to sensitive patients, usually within forty-eight hours. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a second time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small compared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extrahepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeared to be definitely related to use of the drug, laboratory findings w characterized by increased direct-reacting bilirubin, eleva alkaline phosphatase levels, negative or weakly positive cepha flocculation and thymol turbidity tests, elevated serum glutar oxalacetic transaminase levels, peripheral eosinophilia, and n mal cholecystograms.

Individual idiosyncrasy seems evident since jaundice has been reported in other patients taking prolonged courses of medication. Patients with chronic infection have been given 1 to 2 Gm. of the drug daily for periods of two to six months, a patients with rheumatic fever have taken prophylactic doses 0.5 Gm. daily for two years without difficulty. In one group 144 patients who received the drug daily for two years, no ja dice was noted. It was of interest that members of six of th patients' families, who were not taking the drug, had episo of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels w determined in a group of fifty-four adults and children who t 250 mg. of Ilosone daily for an average of sixteen months rheumatic fever prophylaxis. The results were compared w those of a similar group of forty-four patients who received p icillin. There were no cases of jaundice in either group. Elevat of SGPT and serum alkaline phosphatase levels during the cou of treatment was observed in one patient treated with Ilos and in two patients treated with penicillin. Seven other patie in the group receiving Ilosone and four others in the penici group showed elevations in one of the tests at some time dur administration of the drugs.

Very satisfactory therapeutic results, without toxicity, w reported in 102 pediatric patients who received short-term (t day) courses of Ilosone in the treatment of streptococcus inf tions. Results of liver function tests in these patients were c parable to those in a similar control group who had recei penicillin.

Gastro-intestinal disturbances not associated with hepatic fects are observed in a small proportion of individuals as a res of a local stimulating effect of the medication on the aliment tract; however, the normal intestinal gram-negative bacte flora is not appreciably altered by erythromycin drugs.

Although allergic manifestations are uncommon with the of erythromycin, there have been occasional reports of urtica skin eruptions, and, on rare occasions, anaphylaxis.

Administration and Dosage: Ilosone is administered orally.

Ilosone Pulvules®
Ilosone Chewable Tablets
Ilosone Drops
Ilosone, 125, for Oral Suspension

For infants and for children under twenty-five pounds of b weight, the usual dosage is 5 mg. per pound every six hours; children twenty-five to fifty pounds, 125 mg. every six hou (Tablets Ilosone Chewable should be chewed or crushed a swallowed with water.)

For adults and for children over fifty pounds, the usual dos of Ilosone is 250 mg. every six hours.

For severe infections, these dosages may be doubled.

When larger doses are indicated, parenteral erythromy therapy should be considered.

In the treatment of syphilis, the recommended total dosag 20 to 30 Gm. given in divided doses for a period of ten to fift days. Close follow-up of the patient is necessary since eryth mycin drugs have not had adequate evaluation in all stages syphilis. Examinations of spinal fluid are recommended as p of the follow-up therapy.

For gonorrhea, 500 mg. four times a day for four days recommended. In the treatment of gonorrhea, patients wit suspected lesion of syphilis should have a dark-field examinat before receiving antibiotics, and monthly serologic tests sho be made for a period of three months.

How Supplied: Pulvules Ilosone, Capsules, N.F., 125 and 250 (equivalent to base), in bottles of 24 and 100.

Tablets Ilosone Chewable, N.F., 125 mg. (equivalent to bas in bottles of 50.

Ilosone Drops, 5 mg. (equivalent to base) per drop, in 10- size packages, with dropper calibrated at 25 and 50 mg.

Ilosone, 125, for Oral Suspension, N.F., 125 mg. (equival to base) per 5-cc. teaspoonful, in 60 and 150-cc.-size packa

References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:69, 2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:398, 3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198, 19

Additional information available to physicians upon request.
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Look how many ways

Thorazine®

brand of

chlorpromazine

can help

	Tranquilizer	Potentiator	Antiemetic
Agitation	●		
Alcoholism	●		●
Anxiety	●		
Cancer patients	●	●	●
Severe neurodermatitis	●		
Drug addiction withdrawal symptoms	●		●
Emotional disturbances (moderate to severe)	●		
Nausea & vomiting	●		●
Neurological disorders	●		
Obstetrics	●	●	●
Pain	●	●	●
Pediatrics	●	●	●
Porphyria	●	●	
Psychiatric disorders	●		
Hiccups—refractory	●		
Senile agitation	●		
Surgery	●	●	●
Tetanus	●	●	

'Thorazine' is useful as a specific adjuvant in the above named conditions.

The following is a brief precautionary statement. Before prescribing, the physician should be familiar with the complete prescribing information in SK&F literature or *PDR*. *Contraindications:* Comatose states or the presence of large amounts of C.N.S. depressants. *Precautions:* Potentiation of C.N.S. depressants may occur (reduce dosage of C.N.S. depressants when used concomitantly). Antiemetic effect may mask other conditions. Possibility of drowsiness should be borne in mind for patients who drive cars, etc. In pregnancy, use only when necessary to the welfare of the patient. *Side Effects:* Occasionally transitory drowsiness; dry mouth; nasal congestion; constipation; amenorrhea; mild fever; hypotensive effects, sometimes severe with I.M. administration; epinephrine effects may be reversed; dermatological reactions; parkinsonism-like symptoms on high dosage (in rare instances, may persist); weight gain; miosis; lactation and moderate breast engorgement (in females on high dosages); and less frequently cholestatic jaundice. Side effects occurring rarely include: mydriasis; agranulocytosis; skin pigmentation, lenticular and corneal deposits (after prolonged substantial dosages).

For a comprehensive presentation of 'Thorazine' prescribing information and side effects reported with phenothiazine derivatives, please refer to SK&F literature or *PDR*.

Smith Kline & French Laboratories SK&F

mudrane®

for

- EMPHYSEMA
- ASTHMA
- CHRONIC BRONCHITIS
- BRONCHIECTASIS

The fast-disintegrating uncoated tablet gives relief in 15 minutes

Each tablet contains:

Potassium Iodide	195 mg.
Aminophylline	130 mg.
Phenobarbital, Caution: May be habit forming	21 mg.
Ephedrine HCl	16 mg.

FEDERAL LAW PROHIBITS
DISPENSING WITHOUT PRESCRIPTION

Precautions: Usual for aminophylline-ephedrine-phenobarbital. Iodides may cause nausea, long use may cause goiter. Discontinue if symptoms of iodism develop.

Iodide contraindications: tuberculosis, pregnancy.

DOSAGE

One tablet, with full glass of water, 3 or 4 times daily.

Dispensed in bottles of 100 and 1000 tablets.

MUDRANE GG—Formula, dosage and package identical to Mudrane—*except*—100 mg. glyceryl guaiacolate replaces the potassium iodide. The value of Mudrane cannot be enjoyed by a small group in which K.I. is contraindicated. Mudrane GG is prepared for this group.

MUDRANE GG ELIXIR—Four 5 cc teaspoonfuls is equivalent to one Mudrane GG tablet. Dosage adjusted to age and weight of child. Mudrane GG Elixir is for pediatric patients and those who think they cannot swallow tablets. Dispensed in pint and half gallon bottles.

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Tandearil®

oxyphenbutazone

Therapeutic Effects: Tandearil is a nonhormonal compound which may rapidly resolve inflammation and help restore normal joint function. Its action does not affect pituitary-adrenal function or impair immune responses. Its value in osteoarthritis is especially noteworthy because this disorder responds inconsistently to steroids and is often resistant to salicylates. Further, indomethacin is limited only to osteoarthritis of the hip, whereas oxyphenbutazone is effective in all forms of the disease.

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should be closely supervised and should be warned to report immediately fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage. Make regular blood counts. Discontinue the drug and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The most common are nausea, edema and drug rash. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. Infrequently, agranulocytosis, or a generalized allergic reaction may occur and require withdrawal of medication. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported but cannot definitely be attributed to the drug. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

Dosage in Osteoarthritis: The initial daily dosage in adults is 300-600 mg. in divided daily doses. When improvement occurs, dosage should be decreased to the minimum effective level; this should not exceed 400 mg. daily, and is often achieved with only 100-200 mg. daily.

For complete details, please refer to full prescribing information. 6562-VI(B)R

Availability: Tablets of 100 mg.

Geigy Pharmaceuticals
Division of Geigy Chemical Corporation
Ardsley, New York

Geigy

Tandearil®
oxyphenbutazone

helps osteoarthritic joints move again



3 out of 4 osteoarthritics completely or markedly improved

Sperling, I L: 3 Years' Experience with Oxyphenbutazone in the Treatment of Rheumatic Disorders, Applied Therapeutics 6:117, 1964.	76.9% of 407 patients
Watts, T W, Jr: Treatment of Rheumatoid Disorders with Oxyphenbutazone, Clin. Med. 73.65, 1966.	84.6% of 39 patients

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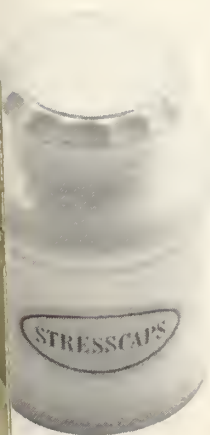
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Beautiful Grounds, Large Rooms with Bath. Mental Health, Care for the Aged and Convalescent Care.
Reasonable Rates



in alcoholism:

B and C vitamins aid therapy. Therapeutic amounts of B and C vitamins can be important in the management of the alcoholic patient. In alcoholism, as in many chronic illnesses, STRESSCAPS vitamins aid therapy.



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Stress Formula Vitamins Lederle

FOR PROFESSIONAL RECOMMENDATION ONLY

Each capsule contains:	
Vitamin B_1 (as Thiamine Mononitrate)	10 mg
Vitamin B_2 (Riboflavin)	10 mg
Vitamin B_6 (Pyridoxine HCl)	2 mg
Vitamin B_{12} Crystalline	4 mcgm
Vitamin C (Ascorbic Acid)	300 mg
Niacinamide	100 mg
Calcium Pantothenate	20 mg

Recommended intake: Adults, 1 capsule daily, for the treatment of vitamin deficiencies. Supplied in decorative "reminder" jars of 30 and 100; bottles of 500.

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691-6 3942

LIBRIUM®
(chlordiazepoxide HCl)

ROCHE

WHEN ANXIETY IS A SIGNIFICANT COMPONENT OF THE CLINICAL PROFILE

Before prescribing, please consult complete product information, a summary of which follows:

Contraindications: Patients with known hypersensitivity to the drug.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. Warn against hazardous occupations requiring complete mental alertness. Use caution in administering to addiction-prone patients or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of child-bearing age requires that its potential benefits be weighed against its possible hazards.

Precautions: In elderly and debilitated and in children over five, limit dosage to smallest effective amount, increasing gradually as needed and tolerated. In general, concomitant use with other psychotropics is not recommended. Paradoxical reactions have been reported in psychiatric patients and hyperactive aggressive children. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically. Observe usual precautions in presence of impaired renal or hepatic function, impending depression and suicidal tendencies.

Adverse reactions: Drowsiness, ataxia and confusion may occur, especially in elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. Syncope occurs rarely. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis, jaundice and hepatic dysfunction) may develop occasionally, making periodic blood counts and liver-function tests advisable during protracted therapy. Individual maintenance dosages should be determined.

Dosage: Oral—Adults: Mild to moderate anxiety and tension, 5 or 10 mg t.i.d. or q.i.d.; severe states, 20 or 25 mg t.i.d. or q.i.d. Geriatric patients: 5 mg b.i.d. to q.i.d.

Supplied: Capsules, 5 mg, 10 mg and 25 mg—bottles of 50.

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1967 Annual Session
The Samoset, Rockland
June 11, 12, 13

HELVIS

THE JOURNAL
of
The Maine Medical Association

VOLUME 58 APRIL, 1967 NUMBER 4

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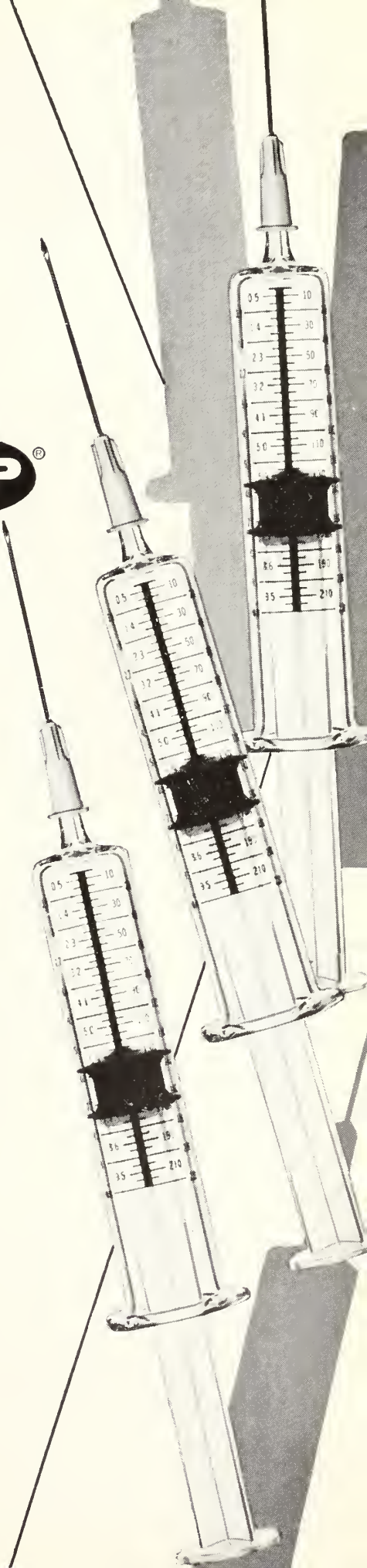

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pyelonephritis?
pyelitis?
urethritis?
prostatitis?

in any case,
usually gram-negative*

Therapy:

two 500 mg. Caplets® q.i.
(initial adult dose)

Indications: Urinary tract infections caused by gram-negative and some gram-positive organisms.

Side effects: Mainly mild, transient gastrointestinal disturbances; in occasional instances, drowsiness, fatigue, pruritus, rash, urticaria, mild eosinophilia, reversible subjective visual disturbances (overbrightness of lights, change in visual color perception, difficulty in focusing, decrease in visual acuity and double vision), and reversible photosensitivity reactions. Marked overdosage, coupled with certain predisposing factors, has produced brief convulsions in a few patients.

Precautions: As with all new drugs, blood and liver function tests are advisable during prolonged treatment. **Pending further experience, like most chemotherapeutic agents, this drug should not be given in the first trimester of pregnancy. It must be used cautiously in patients with liver disease or severe impairment of kidney function.** Because photosensitivity reactions have occurred in a small number of cases, patients should be cautioned to avoid unnecessary exposure to direct sunlight while receiving NegGram, and if a reaction occurs, therapy should be discontinued. The dosage recommended for adults and children should not arbitrarily be doubled unless under the careful supervision of a physician. Bacterial resistance may develop.

When testing the urine for glucose in patients receiving NegGram, Clinistix® Reagent Strips or Tes-Tape® should be used since other reagents give a false-positive reaction.

Dosage: Adults: Four Gm. daily by mouth (2 Caplets® of 500 mg. four times daily) for one to two weeks. Thereafter, if prolonged treatment is indicated, the dosage may be reduced to two Gm. daily. Children may be given approximately *25 mg. per pound* of body weight per day, administered in divided doses. The dosage recommended above for adults and children should not arbitrarily be doubled unless under the careful supervision of a physician. Until further experience is gained, infants under 1 month should not be treated with the drug.

How supplied: Buff-colored, scored Caplets® of **500 mg. for adults,** conveniently available in bottles of 56 (sufficient for one full week of therapy) and in bottles of 1000. **250 mg. for children,** available in bottles of 56 and 1000.

References: (1) Based on 23 clinical papers, 1512 cases. Bibliography on request. (2) Bush, I. M., Orkin, L. A., and Winter, J. W., in Sylvester, J. C.: Antimicrobial Agents and Chemotherapy—1964, Ann Arbor, American Society for Microbiology, 1965, p. 722.

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eradicates most urinary tract infections...

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*As many as 9 out of 10 urinary tract infections are now caused by gram-negative organisms: E. coli, Klebsiella, Aerobacter, Proteus, Paracolon or Pseudomonas[2]... However, infections of the urethra and prostate caused by non-gonococcal gram-negative organisms are believed to be less prevalent.

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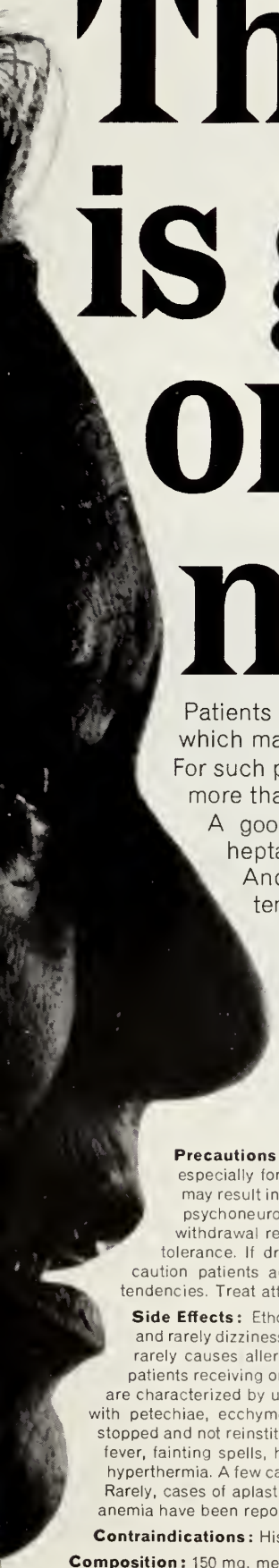
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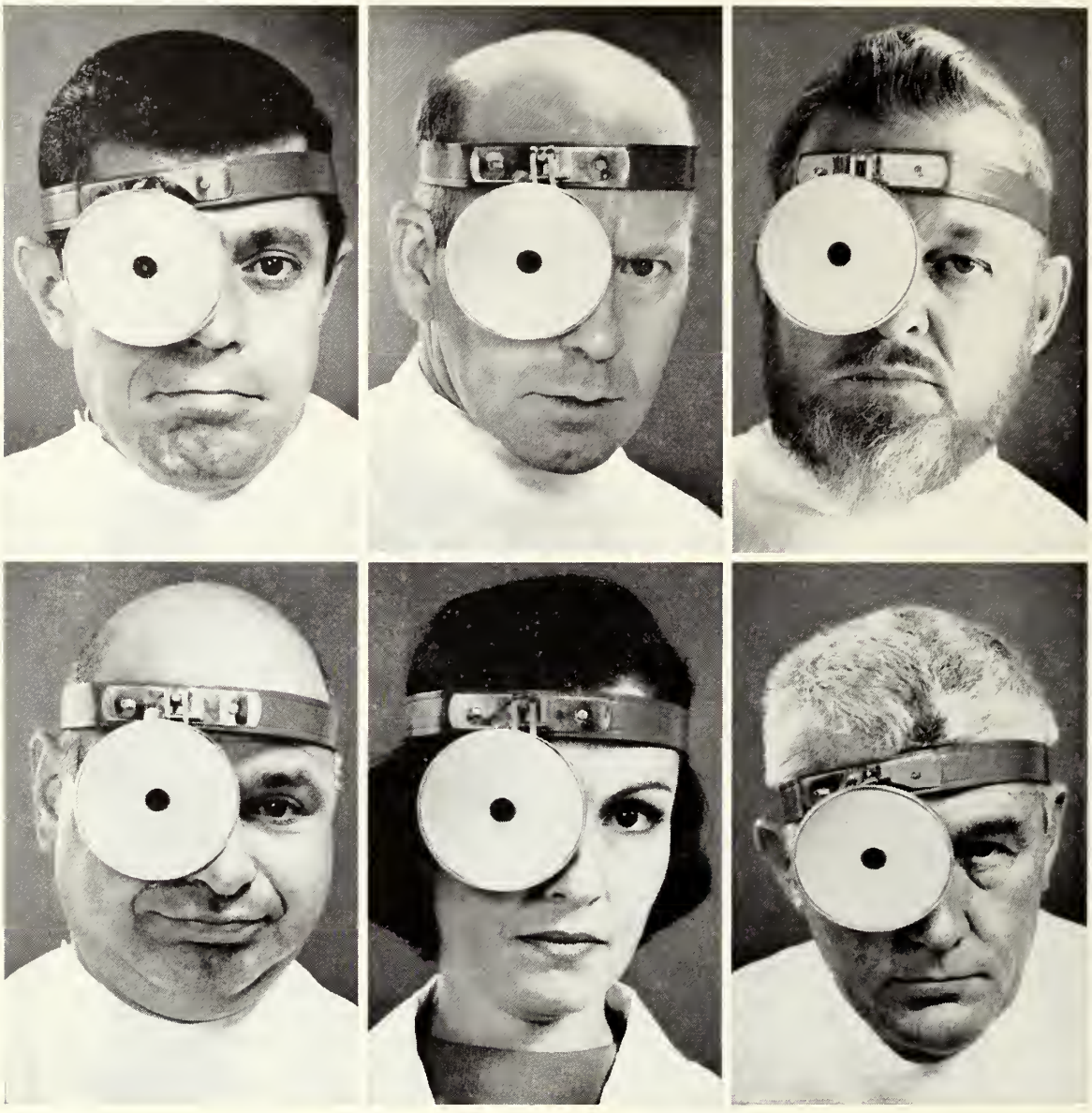
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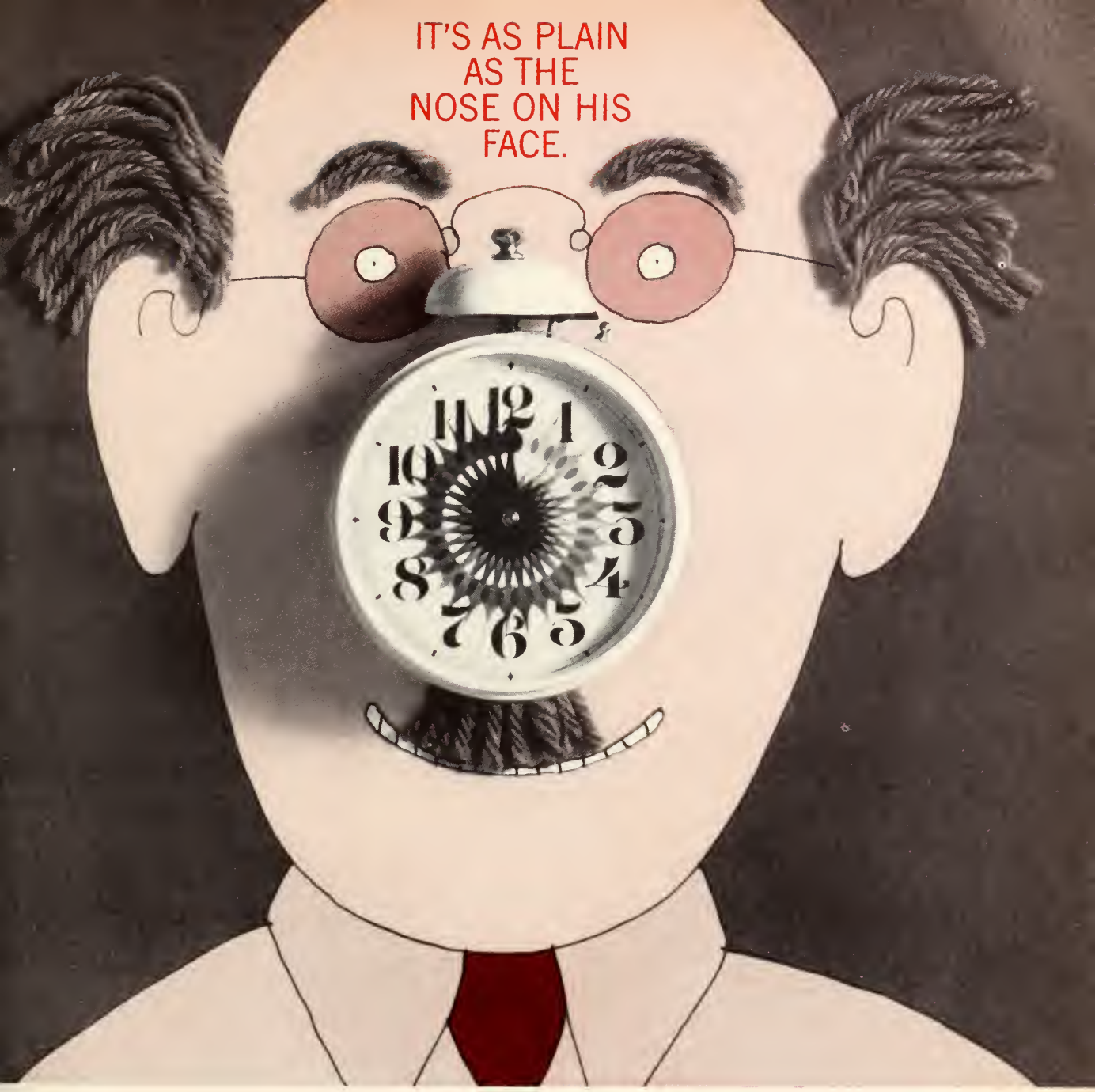
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*, I. W., and Lowell, F. C.: New England
261:478, 1959.

Contraindications: Patients hypersensitive to antihistamines. Not recommended for use during pregnancy.

Precautions: Until the patient's response has been determined, he should be cautioned against engaging in operations requiring alertness. Administer with care to patients with cardiac or peripheral vascular diseases or hypertension.

Side Effects: Hypersensitivity reactions including skin rashes, urticaria, hypotension and thrombocytopenia have been reported on rare occasions. Drowsiness, lassitude, nausea, giddiness, dryness of the mouth, mydriasis, increased irritability, or excitement may be encountered.

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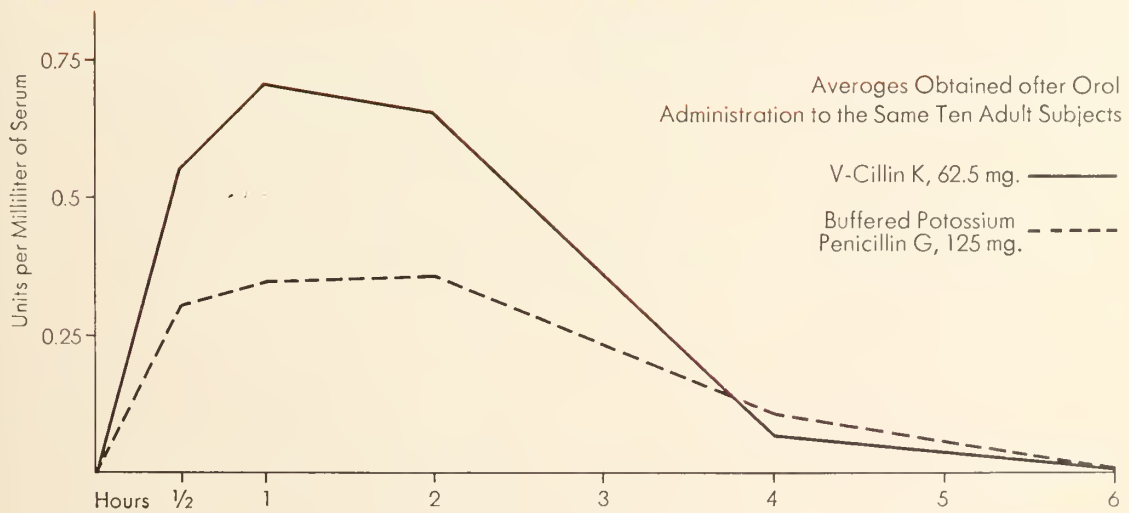
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Penicillin G	0.02	0.005-1.6	0.005	0.002-0.2	0.02	0.01-0.1
Methicillin	1.6	0.4-6.3	0.2	0.1-0.4	0.2	0.1-1.6
Oxacillin	0.4	0.1-3.1	0.04	0.02-0.4	0.1	0.04-0.8
Cloxacillin	0.2	0.2-0.8	0.1	0.1-0.8	—	—
Nafcillin	0.4	0.2-0.8	0.04	0.02-0.1	0.02	0.02-0.2
Ampicillin	0.2	0.1-0.8	0.02	0.01-0.04	0.02	0.01-0.04

Adapted from Klein, J. O., and Finland, M.. New England J. Med ,269 1019, 1963.

with high blood levels, even in the presence of food



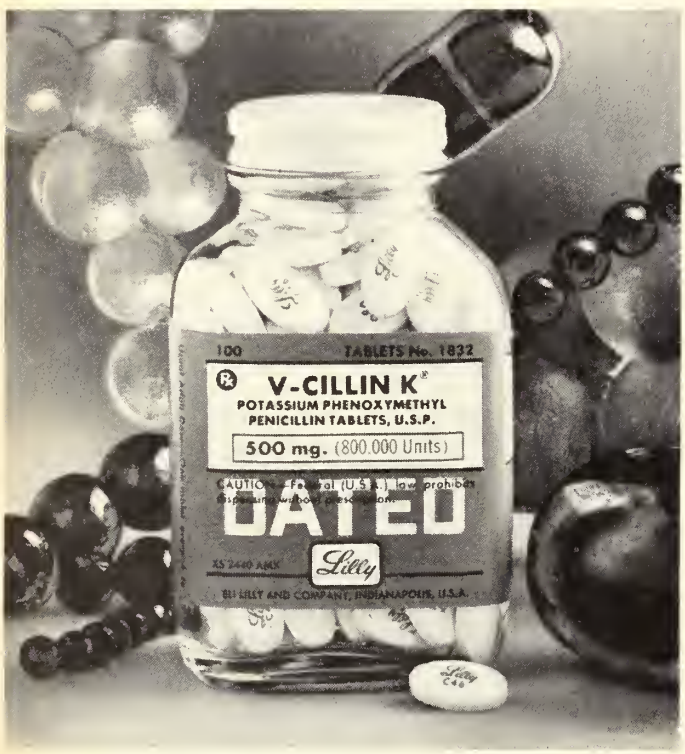
Adapted from Griffith, R. S , and Black, H. R · Current Ther. Res., 6 253, 1964.

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Indications: V-Cillin K has been shown to be effective in the treatment of streptococcus, pneumococcus, and gonococcus infections as well as infections caused by sensitive strains of staphylococci. It may be used for the prophylaxis of streptococcus infections in patients with a history of rheumatic fever and for the prevention of bacterial endocarditis after tonsillectomy and tooth extraction in those patients with a history of rheumatic fever or congenital heart disease.

Contraindication: V-Cillin K should not be administered to a patient with a history of penicillin hypersensitivity.

Precautions: V-Cillin K should be used cautiously, if at all, in a patient with a strongly positive history of allergy. Reactions occur more frequently in individuals with bronchial asthma or other allergies or in those who have previously demonstroted sensitivity to pen[illegible]n hypersensitivity reactions occur, the drug should be discontinued.

Adverse Reactions: Although serious allergic reactions are mu[ch] less common with administration of oral penicillin than with intramusc[ular] lar forms, skin rash, symptoms resembling those of serum sickness, other manifestations of penicillin allergy may occur. When penicillin administered, measures for treating anaphylaxis should be read[ily] available. Those include epinephrine, oxygen, and pressor drugs f[or] relief of immediate allergic manifestations as well as antihistamin[es] and corticosteroids for delayed effects.

The use of antimicrobial agents may be associated with the ove[r]growth of antibiotic-resistant organisms; in such a case, antibiotic a[d]ministration should be stopped and appropriate meosures taken.

Administration and Dosage: For Tablets V-Cillin K and for V-Cil[lin] K, Pediatric, the usual dosage ranges from 125 mg. (200,000 uni[ts] three times a day to 500 mg. (800,000 units) every four hours. For i[n]fants, the daily dosage may be 50 mg. per Kg. of body weight divide[d] into three doses.

Beta-hemolytic streptococcus infections without associated bacte[r]remia may be treated with 200,000 to 400,000 units three times a da[y]. Therapy should be continued for a minimum of ten days to prevent de[-]velopment of rheumatic fever and/or other serious complications. Do[s]age for routine streptococcus prophylaxis in patients with a history o[f] rheumatic fever or congenital heart disease may be 200,000 units onc[e] or twice daily. When such patients undergo tonsillectomy, tooth extra[c]tion, or other minor surgery, the prophylactic dose should be 500,0[00] units every six hours given two days prior to surgery and for two da[ys] postoperatively. If oral medication is not feasible on the day of su[r]gery, parenteral therapy should be considered. Mild to moderate [to] severe pneumococcus pneumonia has been treated effectively wi[th] 250 mg. every six hours.

In staphylococcus infections, 400,000 units or more should be gi[ven] every six to eight hours in conjunction with indicated surgical proce[-]dures.

For gonorrhea in males, 500 mg. (800,000 units) every six hours [in] three doses may be employed; in females, 500 mg. every four hours f[or] six doses are recommended. Patients with a suspected lesion of syph[ilis] should have a dark-field examination before receiving penicillin an[d] monthly serologic tests for a minimum of three months.

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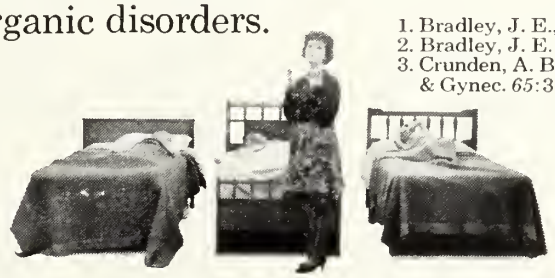
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1. Bradley, J. E., *et al.*: J. Pediat. *38*:41 (Jan.) 1951.
2. Bradley, J. E.: Mod. Med. *20*:71 (Oct. 15) 1952.
3. Crunden, A. B., Jr., and Davis, W. A.: Am. J. Obst. & Gynec. *65*:311 (Feb.) 1953.



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Each 45 cc. (3 tablespoonfuls) contains: alcohol, 15%; pipradrol hydrochloride, 2 mg.; thiamine hydrochloride (vitamin B_1) (10 MDR*), 10 mg.; riboflavin (vitamin B_2) (4 MDR), 5 mg.; pyridoxine hydrochloride (vitamin B_6), 1 mg.; niacinamide (5 MDR), 50 mg.; choline,† 100 mg.; inositol,† 100 mg.; calcium glycerophosphate, 100 mg. (supplies 2% MDR for calcium and for phosphorus) and 1 mg. each of the following: cobalt (as chloride), manganese (as sulfate), magnesium (as acetate), zinc (as acetate), and molybdenum (as ammonium molybdate).

*Multiple of adult Minimum Daily Requirement supplied.
†The need for these substances in human nutrition has not been established.

Indications: 1. Functional fatigue such as that often associated with: a depressing life experience or stressful time of life; advancing years; convalescence; limited activity or confinement. 2. Poor appetite and vitamin-mineral deficiency as they occur in: patients having faulty eating habits; geriatric patients who are losing interest in food; patients convalescing from debilitating illness or surgery.

Dosage: Adults, 1 tablespoonful; children (over 15 years old), 1 to 2 teaspoonfuls; children (4 to 15 years old), 1 teaspoonful. To be taken three times daily 30 minutes before meals.

Contraindications: As with other drugs with CNS stimulating action, Alertonic is contraindicated in hyperactive, agitated or severely anxious patients and in chorea or obsessive compulsive states.

Side effects: Reports of overstimulation have been rare. Patients who are known to be unduly sensitive to the effects of stimulant drugs should be observed carefully in the initial stages of treatment.

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- The nonfatiguing flavor and smooth, nongritty consistency of tablets and liquid encourage continued patient cooperation during long-term therapy.

Composition: Each Mylanta chewable tablet or teaspoonful (5 ml.) of liquid contains: magnesium hydroxide, 200 mg.; aluminum hydroxide, dried gel, 200 mg.; simethicone, 20 mg. **Dosage:** one or two tablets, well chewed or allowed to dissolve in the mouth, or one or two teaspoonfuls of liquid to be taken between meals and at bedtime.

The Stuart Company, Pasadena, California
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With these three therapeutic building blocks you can create a once-a-day regimen to fit almost any degree of hypertension. See the following pages for details . . .



Consider starting your hypertensives on this basic thiazide

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Enduron eliminates sodium around the clock, yet is relatively sparing of potassium

Enduron is a true 24-hour single-dose thiazide. Its sodium excretion is not squeezed into an abrupt peak during the first several hours. It is well-sustained in a plateau-like effect — with little reduction in intensity during the first 12 hours, and decline thereafter only gradual.

Potassium loss, in contrast, reaches an early minor peak. Then it subsides rapidly. Moreover, doses larger than 5 mg. have little added effect on potassium. Thus doubling the dose from 5 to 10 mg. approximately doubles sodium excretion—yet increases potassium loss little or none.

Use Enduron once a day as an ideal starting therapy in mild hypertension. Use it, too, as a basic therapeutic building block with which other agents can be joined, for managing your more resistant hypertensives.

Once a day, every day

ENDURON®
METHYCLOTHIAZIDE



DAILY DOSAGE RANGE	Minimum	Usual	Intermediate	Maximum
	2.5 mg. tablet	5 mg. tablet	7.5 mg.	10 mg.

See Brief Summary on final page of advertisement.

To build added response, shift to Enduronyl

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The deserpidine component compares favorably to reserpine, but with reduced side effects

The rauwolfia component of Enduronyl is deserpidine (Harmonyl®), a purified crystalline alkaloid. It is comparable to reserpine in its antihypertensive and tranquilizing activity. Yet it produces less tendency toward typical rauwolfia side effects such as drowsiness, lethargy, stuffy nose, depression, etc.

Patient acceptance has been excellent.

Enduronyl comes in two strengths: regular and Forte. Both provide 5 mg. of Enduron. The variation is where most needed: in the deserpidine. These scored tablets give a surprisingly flexible choice of doses (see below).

Use Enduronyl for your patients within the broad range of mild to moderate hypertension. Dosage is *once* a day: this means Enduronyl will generally cost patients less than equivalent drugs taken two or three times daily.



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ENDURONYL®

METHYCLOTHIAZIDE 5 MG. WITH DESERPIDINE 0.25 MG.

ENDURONYL FORTE

METHYCLOTHIAZIDE 5 MG. WITH DESERPIDINE 0.5 MG.

	Minimum	Usual	Intermediate	Maximum
DAILY DOSAGE RANGE	2.5 mg. methyclothiazide 0.125 mg. deserpidine	5 mg. methyclothiazide 0.25 mg. deserpidine	7.5 mg. methyclothiazide 0.375 mg. deserpidine	10 mg. methyclothiazide 0.5 mg. deserpidine
DAILY DOSAGE RANGE	2.5 mg. methyclothiazide 0.25 mg. deserpidine	5 mg. methyclothiazide 0.5 mg. deserpidine	7.5 mg. methyclothiazide 0.75 mg. deserpidine	10 mg. methyclothiazide 1 mg. deserpidine

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Eutonyl affords a different kind of basic therapy for moderate to severe cases

Effect tied to reduced peripheral vascular resistance; no central depressant action

Eutonyl is a unique nonhydrazine agent. It is reported to act by reducing peripheral vascular resistance, with little or no effect upon cardiac output.[1,2]

In clinical trials, significant reductions in mean blood pressure were seen in 84% of patients studied — including some unusually difficult cases. Eutonyl lowers diastolic in proportion to systolic, and in half of the cases studied, reductions in the sitting and recumbent positions were nearly as great as in the standing position.

Most important: There is no central depressant action. In fact, many patients reported an *increased* sense of well being.

Here, then, is a highly effective *basic treatment* for moderate to severe cases—and one that will not hamper your patient with lethargy or drowsiness while on treatment.

Once a day, every day

EUTONYL®
PARGYLINE HYDROCHLORIDE



DAILY DOSAGE RANGE	Minimum	Usual starting	Intermediate	Maximum
	10 mg. tablet	25 mg. tablet	50 mg. tablet or as needed	200 mg.

1. Brest, A. N., et al., Cardiac and Renal Hemodynamic Response to Pargyline, Ann. N. Y. Acad. Sci., 107-1016, 1963.
2. Winsor, T., Pargyline Hydrochloride, Hypertension, Urinary Tryptamine, and Vascular Reflexes, Geriatrics, 19:598, Aug., 1964.

See Brief Summary on final page of advertisement.

Eutron adds thiazide for enhanced therapy with milder side effects

ABBOTT

Only a 7/4 mm. span between standing and recumbent pressures—reduced chance of orthastatic hypotension

The combining of Eutonyl and Enduron in Eutron permits a significantly greater antihypertensive effect than with either agent used alone. This in turn may allow therapeutic success with lesser dosage—and correspondingly milder side effects.

Indeed, fully 94.5% of all patients studied during clinical trials continued on therapy uninterrupted by side effects.

Most striking was the drug's action in lowering blood pressure to *nearly equal levels in all body positions*. Total average spread between standing and recumbent readings (after treatment) was only 7/4 mm. Hg.

Thus, in your moderate to severe cases, Eutron affords a usually smooth course of therapy, with reduced likelihood of orthostatic effects. And, because of the thiazide component, Eutron may be used in the presence of congestive heart failure.

Once a day, every day

EUTRON™

PARGYLINE HYDROCHLORIDE 25 MG.
WITH METHYCLOTHIAZIDE 5 MG.





	Minimum	Usual starting	Intermediate	Maximum
DAILY DOSAGE RANGE	12.5 mg. pargyline hydrochloride and 2.5 mg. methyclothiazide	25 mg. pargyline hydrochloride and 5 mg. methyclothiazide	37.5 mg. pargyline hydrochloride and 7.5 mg. methyclothiazide	50 mg. pargyline hydrochloride and 10 mg. methyclothiazide

See Brief Summary on final page of advertisement.

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ENDURON®

METHYCLOTHIAZIDE

ENDURONYL®

Each tablet contains Methyclothiazide 5 mg.
with Deserpidine 0.25 mg. or 0.5 mg.

Indications: Enduron is used to control edema and mild hypertension. Also used with other drugs for hypertension. Enduronyl is used in mild to moderately severe hypertension.

Contraindications: Neither Enduron nor Enduronyl should be used in severe renal disease (except nephrosis) or shutdown; in severe hepatic disease or impending hepatic coma; in patients sensitive to thiazides. Enduronyl is contraindicated in severe mental depression, active peptic ulcer, and ulcerative colitis.

Warnings: Consider possible sensitivity reactions in patients with a history of allergy or asthma. Avoid use of enteric-coated potassium tablets, as these may induce serious or fatal small bowel lesions; if added potassium intake is desired, dietary supplementation is recommended. Coated potassium tablets should be reserved for cautious use when adequate dietary supplementation is impractical.

Precautions and Adverse Reactions: Use thiazides with caution in severe renal dysfunction. Caution is also necessary with impaired hepatic function or progressive liver disease. During intensive or prolonged thiazide therapy, watch chloride and potassium levels (especially the latter if patient is on digitalis). In surgical patients, thiazides may alter response to vasopressors and tubocurarine. Use thiazides with caution in pregnancy (bone marrow depression, thrombocytopenia, or altered carbohydrate metabolism are possible in certain newborn). Occasional thiazide side effects also include blood dyscrasias; elevations of BUN, serum uric acid, or blood sugar; electrolyte imbalance, g.i. disturbances, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, pancreatitis, and gout.

Use Enduronyl with caution in patients with a history of peptic ulcer, as rauwolfias may increase gastric secretion. Discontinue at the first sign of mental depression. Rauwolfias may increase hypotensive effects of surgery or anesthesia, and are best discontinued two weeks prior. They also lower the convulsive threshold in epilepsy. Other possible rauwolfia side effects include drowsiness, nasal stuffiness, nausea, weight gain, and diarrhea. Less frequent complications of deserpidine therapy are aggravation of peptic ulcer, epistaxis, and skin eruption. Alcohol, barbiturates or narcotics may potentiate action of deserpidine.

EUTONYL®

PARGYLINE HYDROCHLORIDE

EUTRON™

Each tablet contains Pargyline Hydrochloride 25 mg.
with Methyclothiazide 5 mg.

Indications: For treatment of patients with moderate to severe hypertension, especially those with severe diastolic hypertension. Not recommended for use in patients with mild or labile hypertension amenable to therapy with sedatives and/or thiazide diuretics alone.

Contraindications: Pheochromocytoma, advanced renal disease, paranoid schizophrenia and hyperthyroidism. Until further experience is gained, not recommended for use in patients with malignant hypertension, children under 12, or pregnant patients.

Concomitant use of the following is contraindicated: other monoamine oxidase inhibitors; parenteral forms of reserpine or guanethidine; sympathomimetic drugs; foods high in tyramine such as cheese; imipramine and amitriptyline, or similar antidepressants; methyldopa. Interval of two weeks should separate therapy and use of these agents.

Warnings: Pargyline hydrochloride is a monoamine oxidase inhibitor. Warn patients against eating cheese, and using alcohol, proprietary drugs or other medication without the knowledge of the physician. When necessary to administer alcohol, narcotics (meperidine should be avoided), antihistamines, anesthetics, barbiturates, chloral hydrate and other hypnotics, sedatives, tranquilizers, or caffeine, these can be used cautiously at a dosage of ¼ to 1/5 the usual amount. Adjust dose of anesthetic agents to response of patient. Avoid parenteral administration where possible. Withdraw pargyline two weeks before elective surgery.

Warn patients about the possibility of postural hypotension. Those with angina or other evidence of coronary disease should not increase physical activity. Pargyline may lower blood sugar. Avoid use of enteric-coated potassium tablets, as these may induce serious or fatal small-bowel lesions; if added potassium intake is desired, dietary supplementation is recommended. Coated potassium tablets should be reserved for cautious use when adequate dietary supplementation is impractical.

Precautions: Measure blood pressure while patient is standing to determine antihypertensive effect. Use with caution in hyperactive or hyperexcitable persons. Such persons may show increased restlessness and agitation. Withdraw drug during acute febrile illness. Watch patients with impaired renal function for increasing drug effects or elevation of BUN and other evidence of progressive renal failure; withdraw drug if such alterations persist and progress. Use with caution in patients with liver dysfunction or progressive liver disease. As with all new drugs, complete blood counts, urinalyses, and liver function tests should be performed periodically. With prolonged therapy, examine patients for change in color perception, visual fields, and fundi.

During intensive or prolonged methyclothiazide therapy, watch chloride and potassium levels (especially latter if patient is on digitalis). Methyclothiazide also may reduce arterial response to pressor amines. Use thiazides with caution in pregnancy (bone marrow depression, thrombocytopenia, or altered carbohydrate metabolism are possible in certain newborns). Thiazide drugs may increase responsiveness to tubocurarine.

Side Effects: Pargyline may be associated with orthostatic hypotension. Mild constipation, slight edema, dry mouth, sweating, increased appetite, arthralgia, nausea and vomiting, headache, insomnia, difficulty in micturition, nightmares, impotence, delayed ejaculation, rash, and purpura have been encountered with pargyline. Hyperexcitability, increased neuromuscular activity (muscle twitching) and other extra-pyramidal symptoms have been reported. Drug fever is extremely rare. Congestive heart failure has been reported in a few patients with reduced cardiac reserve.

Thiazide side effects also include blood dyscrasias, elevation of BUN, serum uric acid, or blood sugar, electrolyte imbalance, g.i. disturbances, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, pancreatitis, and gout. Nocturia has been observed with the combination.

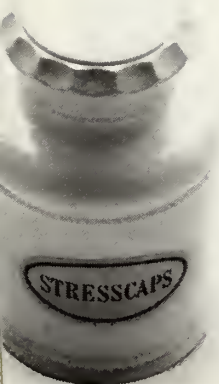
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Iatrogenic Streptococcal Meningitis

Peter F. Lansing, M.D.*

Introduction

Iatrogenic meningitis illustrates Kelley's law which states that, "whatever can go wrong will go wrong." The relatively small number of recorded cases probably reflects a reluctance to present iatrogenic disease rather than true low incidence. The two case reports which we are documenting involve a patient who developed streptococcal meningitis as a result of a lumbar puncture and another who developed meningitis as a result of a cervical myelogram.

Case Reports

Case No. 1 – A 37-year-old white male was admitted to the Hospital on December 13, 1965, to determine if he had multiple sclerosis. Physical examination revealed advanced cerebellar signs: 4+ knee, 2+ biceps, and 3+ triceps jerks; and weakness of convergence of the right eye on left lateral gaze. That day a lumbar puncture was performed with difficulty because the patient was tense and anxious. Multiple punctures were made. The examination was finally successful in the sitting position. The fluid was clear; there was a total protein of 70 mg., many RBCs, 2 lymphocytes, and 1 neutrophil. Gamma globulin was 14 mg. (zinc sulfate precipitated). During the evening of December 14, the patient developed a temperature of 102° F with nausea and vomiting and a headache with confusion. The symptoms subsided. In the afternoon of December 15, the patient again complained of a severe headache and now was found to have a stiff neck. Examination of the spinal fluid revealed a cloudy white fluid with a white blood cell count of 2,650 with many neutrophils and a sugar value of 53 mg. %. A gram stain appeared to contain several gram-positive cocci and the patient was thought to have a staphylococcal meningitis and therefore was placed on 12 gm. of cephalothin (Keflin®) administered intramuscularly. On December 16, there was minimal improvement but there still was a temperature of 100.2°, nuchal rigidity, and a severe headache.

On December 17, the temperature rose to 104.4°; there was marked nuchal rigidity, marked confusion, and lethargy. A repeat spinal fluid examination revealed 3,700 white blood cells with 3,000 neutrophils and 700 lymphocytes, a sugar value of 40 mg. %; a simultaneously drawn blood sugar was 125 mg. %; a gram stain revealed no organisms. The total protein of the spinal fluid was 122 mg. %. Four grams of Chloromycetin® intramuscularly were added to the daily antibiotic regime.

On December 18, the temperature was 101.4°; the patient was more alert and the neck was more supple. Further improvement took place December 19 and there was only a headache when the patient attempted to sit up. Cephalothin (Keflin) was discontinued December 20 while Chloromycetin was continued. The patient became afebrile December 22 and remained afebrile thereafter.

No bacterial growth occurred upon culture of the fluid obtained during the second lumbar puncture. Culture of the fluid from the third lumbar puncture done on December 17 revealed the presence of a microaerophilic streptococcus sensitive to a wide spectrum of antibiotics including Chloromycetin. Chloromycetin was discontinued January 3. Because of the persistence of cells in the spinal fluid, the patient received a course of 8 million units of penicillin a day introduced intramuscularly from January 8 to January 16.

During this period of time the patient intermittently had an unsustained left ankle and knee clonus. He was presented to a neurological consultant on January 7 who confirmed the initial impression of multiple sclerosis. The patient was discharged from the hospital on January 17, 1966.

Comments

There is little doubt that the organisms producing the meningitis were introduced during the first spinal fluid withdrawal on December 13 when multiple punctures had to be undertaken.

The anaerobic streptococci belong to the genus of Peptostreptococcus of which there are 13 species listed in the 7th edition of Bergey's Manual.[1] Several of these are pathogenic. They are encountered frequently in cultures from uterine sources, pelvic abscesses, appendiceal abscesses, sinus and ear infections, and from gangrenous wounds. Recognition is often difficult as a result of normal cultural procedures, since the organism usually occurs in mixed culture and may fail to develop without anaerobic or microaerophilic conditions or they may be overgrown by other species. Microaerophilism is exhibited by those strains which grow luxuriantly under anaerobic conditions but only sparsely under aerobic conditions. The alpha, beta, or gamma characteristic is also exhibited by such strains; alpha

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TABLE 1

	Spinal Fluid								Blood			
Date	*WBC*	*Neut.*	*Lymph.*	*RBC*	*Total Protein*	*Sugar*	*Pressure (Sitting)*	*Culture*	*WBC*	*Neut.*	*Lymph.*	*Sugar*
12/13/65	3	1	2	Many	70		300					
12/14/65									13,600	78	12	
12/15/65	2650	Many				53.6		No growth				
12/17/65	3700	3000	700	Few	122	40	Init. 300 Final 50	Microaerophilic a-hemo. strep.	24,500	94	4	125
12/22/65	60	16	44		58	38	190	No growth	13,900	72	28	110
12/28/65	18	6	12	Occas.	40	46	210	No growth	11,500	78	22	102
1/8/66	11	0	11	1	37			No growth	9,000	66	26	
1/15/66	4	4	0		28		280	No growth				

streptococci developing surface colonies with definite greening or varying zones of hemolysis on anaerobic blood agar plates.[2]

Case No. 2 – A 57-year-old man was admitted to the Hospital on April 20, 1964, because of symptoms indicative of cervical nerve root compression. Physical findings were compatible with nerve root compression of C_5 to C_7 affecting the left upper extremity. Cervical traction was ineffective. A cervical myelogram was done on April 29. Iophendylate (Pantopaque®) dye was injected. Approximately one-half of the dye was removed at the end of the procedure. Pressures and Queckenstedt test were normal. There was 1 lymphocyte, a total protein of 25 mg. %, and a negative colloidal gold curve on examination of the spinal fluid. On April 30, 14 hours after the myelogram, the patient developed a severe headache with intermittent vomiting, lassitude, moderate nuchal rigidity, and a temperature of 106.2° F. Examination of the spinal fluid at that time revealed a cloudy fluid with a cell count of 2,800 with 87% neutrophils and 13% lymphocytes. The spinal fluid sugar was 22 mg. % and the total protein of the spinal fluid was 170 mg. %. A gram stain of the sediment revealed no organisms but culture revealed alpha hemolytic streptococci (S. viridans) sensitive to a wide range of antibiotics. Twenty thousand units of penicillin were placed intrathecally. A regimen of 2,000,000 units of penicillin administered intramuscularly every 2 hours was prescribed. On May 1, the temperature decreased from 105°F in the morning to 97°F in the late evening. The patient continued to be lethargic and have intermittent vomiting, headache, irritability, and nuchal rigidity. On May 2, the patient still had a headache but was less nauseated and his temperature averaged 101°F. Intramuscular administration of penicillin in divided doses for a total of 24,000,000 units per day was continued. The patient became afebrile May 7 and remained afebrile thereafter. He remained free of symptoms of meningitis after May 4. The remainder of the findings of laboratory studies performed on subsequent spinal fluid samples are given in Table 2.

The daily dosage of penicillin was reduced to 9,000,000 units intramuscularly starting May 10 and was discontinued entirely May 14 when the patient was placed on a leave of absence. The patient had no residuals from his bout with meningitis except for unsteadiness on sudden turns and unsustained fine nystagmus on gaze to the right and a neuropathy of the left gluteal muscle which was considered unrelated to the bout with meningitis.

Comment

Cases of adhesive arachnoiditis after iophendylate myelography have been reported.[3]

Discussion

Meningitis may occur[3] as a consequence of lumbar puncture for diagnostic or therapeutic purposes or for the induction of anesthesia. Under these circumstances the meningeal reaction may be related to trauma, the introduction of contaminating microorganisms, the irritative effect of the agent employed for anesthesia, or the response to some irritant contaminating the needles or syringes. Fortunately, such responses are rare but this possibility must be considered in any patient with meningeal signs developing shortly after a diagnostic lumbar puncture, myelogram, pneumoencephalogram, ventriculogram, or spinal anesthesia. Bacterial contamination has usually been due to Staphylococcus aureus,[4,5] or to Pseudomonas species and coliform organisms,[6,7] and occasionally due to Herellea.[8]

One author[9] has not infrequently found squamous cells from the skin with staphylococci and occasionally even little cylindrical fragments of skin punched out by the exploring needle in the centrifuged deposits of lumbar puncture specimens.

It would appear that multiple punctures are hazardous as they increase the incidence of contamination. These can be avoided by proper sedation and careful selection of the puncture site. Appropriate draping of the patient leaving only the puncture site exposed is essential.

It is at times quite difficult to differentiate post-puncture headaches from those of developing iatrogenic meningitis.

Headache, vomiting, stiffness of the neck, and very occasionally fever up to 102° F occur after lumbar puncture with an incidence varying from 14 to 40%. The symptoms usually develop 12 to 24 hours after the puncture. Characteristically the headache disappears whenever the patient lies down but returns immediately or shortly after assuming the erect position. Headache and vomiting may persist for several days and occasionally symptoms may persist for 2 or more weeks, especially in neurotic individuals. Post-puncture symptoms are due to leakage of spinal fluid through the hole or holes produced in the dura by the spinal needle. Merritt and Fremont-Smith[10] failed to agree with earlier authors who claimed that irritation from a single lumbar puncture may cause a meningeal reaction with pleocytosis.

TABLE 2

	Spinal Fluid								Blood			
Date	*WBC*	*Neut.*	*Lymph.*	*RBC*	*Total Protein*	*Sugar*	*Pressure (Lateral decubitus)*	*Culture*	*WBC*	*Neut.*	*Lymph.*	*Sugar*
4/29/66	1	0	1		25							
4/30/66	2800	87	13		170	22	190	Alpha hemolytic streptococcus				
5/1/66									19,200	80	20	
5/4/66		3	7	45	35	45	140	No growth				
5/13/66	0	0	0	5	31	48	165	No growth				

The latter occurred only when contaminants including air were introduced. These authors found the only satisfactory method of preventing lumbar puncture headaches is to keep the patient flat in bed for 24 to 48 hours.

The presence of iatrogenic meningitis can only be surmised on suspicion as the symptoms are similar to post-puncture headaches. If in addition the patient has lethargy, confusion (prominent in both of the reported cases), irritability, photophobia and high fever, it becomes essential to repeat the lumbar puncture with examination of the spinal fluid to include a gram stain, cell count, culture, and sugar analysis.

Summary

Two cases of iatrogenic streptococcal meningitis are reported. One followed lumbar puncture, the other a cervical myelogram. Fortunately both cases recovered rapidly with appropriate antibiotics. The danger of contamination by multiple punctures is stressed.

References

1. Breed, R. S., Murray, E. G. D., and Smith, N. R.: Bergey's Manual of Determinative Bacteriology, 7th ed., Baltimore, 1957, Williams & Wilkins Co.
2. Bailey, W. R., and Scott, E. G.: Diagnostic Microbiology, a Textbook for the Isolation and Identification of Pathogenic Microorganisms, St. Louis, 1962, C. V. Mosby Company.
3. Swartz, M. N., and Dodge, P. R.: Bacterial Meningitis – A Review of Selected Aspects. (1) General Clinical Features, Special Problems, and Unusual Meningeal Reactions Mimicking Bacterial Meningitis (Continued), N. E. J. Med., Vol. 272:900-901 (1965).
4. Mulcare, R. J., and Harter, D. H.: Changing Patterns of Staphylococcal Meningitis. Arch. Neurol., Vol. 7:114-120 (1962).
5. Kislak, J. W., Marcuse, D. J., and Hass, W. K.: Staphylococcal Meningitis Following Pneumoencephalography. Ann. Int. Med., Vol. 57: 128-132 (1962).
6. Biehl, J. P., and Hamburger, M.: Polymyxin B Therapy of Meningitis Following Procedures on Central Nervous System: Beneficial Therapeutic Effect of Polymyxin B in Meningitis Due to Organisms of Colon Group. Arch. Int. Med., Vol. 93:367-378 (1954).
7. Cutler, M., and Cutler, P.: Iatrogenic Meningitis. J. Med. Soc. New Jersey, Vol. 50:510-514 (1953).
8. Hook, E. B., and Aase, J. M.: Herellea Meningitis Following Ventriculography. Am. J. Dis. of Child., Vol. 108: 452-453 (1964).
9. Dickson, W. E. C.: The Cerebrospinal Fluid in Meningitis. Post-Grad. Med. J., Vol. 20:69 (1944).
10. Merritt, H. M., and Fremont-Smith, F.: The Cerebrospinal Fluid, Philadelphia, Penn., 1938, W. B. Saunders Co.

The Subclavian Steal Syndrome–D. A. Killen et al (Dept of Surgery, Vanderbilt Univ School of Medicine, Nashville, Tenn)

Amer Surg 33:128-138 (Feb) 1967

Occlusion of the subclavian or innominate artery, proximal to the origin of the vertebral artery, results in flow of blood from the ipsilateral vertebral artery into the distal subclavian artery. This situation results in "stealing" of blood from the basilovertebral axis to supply the shoulder and arm. The diagnosis of subclavian steal syndrome has been established by arteriographic studies in 20 patients. Neurologic symptoms were present in 14 patients; symptoms of arterial insufficiency of the involved arm were present in 8. In 12 patients neurologic symptoms consisted of transient ischemic episodes only. Delineation of the responsible occlusive arterial lesion and documentation of reverse vertebral artery flow were based on the findings at thoracic aortography in each patient. Atherosclerotic occlusive disease was the etiology in 18 patients. Operative revascularization of the obstructed artery responsible for the reversal of vertebral artery flow was attempted in 18 cases; arterial reconstruction was successfully accomplished in 17. The reconstructed artery has remained patent in 14 patients.

Pseudoxanthoma Elasticum and Gastrointestinal Bleeding*

Irving J. Poliner, M.D.**

Pseudoxanthoma elasticum is an infrequent disorder, genetically inherited, which effects predominantly the elastic tissue of the body. The clinical manifestations vary with the organ system affected. The gastrointestinal tract, if involved, will present with bleeding.[1–3]

Recently a patient with pseudoxanthoma elasticum and gastrointestinal bleeding was seen and studied at the Maine Medical Center. Gastrointestinal studies included x-rays, sigmoidoscopy with rectal biopsy and gastroscopy. The cause of the gastrointestinal bleeding is at some variance with that found in reported cases. For this reason, the patient is presented in detail.

Case Report

L. P. (MMC, #34893), a 54-year-old white male, entered the Maine Medical Center the second time in May, 1965, for hematemesis and melena. Approximately twenty years prior he was first informed that he had "ulcers." Five years prior to admission he had a black stool. An upper gastrointestinal series demonstrated a duodenal ulcer, but he refused hospitalization. One year prior to admission he had another episode of melena; he again refused hospitalization. Approximately one month prior to admission he developed increasing ulcer symptoms, which he ignored. The day of admission he vomited coffee-ground material and had a black tarry stool. He consulted his personal physician, who advised immediate hospitalization.

For many years he had had difficulty with his vision and had seen numerous eye consultants. In 1963 a diagnosis of pseudoxanthoma elasticum was made. At that time a dermatological consultant confirmed this diagnosis.

In 1963 he had had a hemorrhoidectomy at the Maine Medical Center. No abnormality of hemorrhoidal tissue was noted.

His family history failed to disclose either ulcers or pseudoxanthoma elasticum. There were 11 siblings and two children; all in good health.

Systems review showed that he occasionally had headaches. Empirin® would relieve his headaches, but upset his stomach. He had developed nocturia over the previous three years.

Physical examination on admission showed a blood pressure of 110/70, pulse of 96, and respirations of 16. He was a well-developed, well-nourished, white male, who appeared pale, apprehensive and sweaty. His pupils were small and reacted to light and accommodation slowly. Vision was not tested. Funduscopic examination showed old retinitis and angiotid streaks. Two sets of dentures were present. There were no heart murmurs or irregularities. Minimal epigastric tenderness and a moderate increase in the peristaltic sounds was noted. A stool was red-brown and 4+ to guaiac testing. There was loss of turgor of the skin over the neck, axillae, groin and possibly over the anterior chest. Pseudoxanthoma lesions were present in both axillae, around the umbilicus, in both groins, and to a very slight degree in the creases in the neck. Pulses were present and strong in all four extremeties. The remainder of the physical examination was normal.

After admission the patient's stomach was lavaged with ice water for two hours. Initially the returns were a blackish, coffee-ground-like material, which tested 4+ to guaiac; but there was never any bright red blood. An emergency hemoglobin was 9.9 grams with a hematocrit of 30. During the following 24 hours he received three units of blood; his hemoglobin stabilized at 10.6 grams and his hematocrit at 32. Overnight the patient was kept on continual nasogastric suction. On the morning after admission an esophagoscopy and gastroscopy were done. A small hiatal hernia was noted, but there was no evidence of esophagitis or bleeding. Gastroscopy showed three small petechial areas in the mucosa, but no pseudoxanthoma lesions or other abnormalities. The stomach itself was clear with no evidence of blood. Following the endoscopic examination, an emergency upper gastrointestinal series was done; this demonstrated an active duodenal ulcer. During the remainder of his hospital stay, he was placed on a milk and Maalox® regime and gradually changed to a modified ulcer diet. He was kept on anti-cholinergics and sedation. His stools became brown, but remained 4+ to guaiac testing throughout the entire hospital stay. Prior to discharge he had a sigmoidoscopy and rectal biopsy which were normal.

Laboratory studies showed a cholesterol of 160 mg%. Blood calcium, phosphorus, alkaline phosphatase, total protein, A/G ratio and uric acid were all normal. A non-stimulated gastric aspiration had a pH of 1.9 with 25 units of free acid.

Following discharge from the hospital, his stools became guaiac negative. He has remained relatively asymptomatic.

Discussion

An extensive review of pseudoxanthoma elasticum has been recently published.[4]

The clinical manifestations are usually in the skin, which loses its elasticity and develops marked sagging, in the neck, axiliary folds, groins, and around the umbilicus. Histologically the skin shows masses of abnormal elastic staining material within the mid-dermis and less frequently within the upper or lower dermis. Calcification of the elastic fibers in the arterioles is one of the earliest recognizable histological changes. This may be the basic underlying defect causing various organs systems involvement. Yellowish, pebbly lesions are seen also in the skin in the affected areas. These have the appearance of xanthoma, but on biopsy no xanthoma cells are present.

Pseudoxanthoma elasticum lesions presenting as a yellow reticular pattern may be present in the oral mucosa. Redundant folds of gastric mucosa have been reported on gastroscopy. These findings are similar in appearance to those in the skin and possibly in the oral lesions. Eight patients reported by Goodman[4] were proctoscoped and rectal biopsies were done. Calcified elastic tissue in these biopsies was seen only in one. This is confusing since the six gross abnormalities were noted in the redundant mucosa; and in three, yellowish plaques with a granular pattern were seen. Whether these specific areas were biopsied was not stated in the report. Two patients had rectal polyps discovered and removed; these polyps were benign.

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Massive bleeding is the only serious gastrointestinal complication in the illness.[5] It has been suggested that bleeding is due to loss of elastic fibers around the small blood vessels in the stomach or bowel with resultant weakened blood vessels, dilatation of the small arterioles and ultimate rupture with massive bleeding. The frequency of massive bleeding in this illness is difficult to determine. Conner reviewed 106 cases.[6] Three patients bled massively from hemorrhoids (which our patient had had removed), one patient from a duodenal ulcer (which our patient had), and in two patients no specific cause was found. In twelve patients reported by Goodman ulcer symptoms were present in four and another two had suggestive symptoms.[4] In only two patients, however, could an ulcer be demonstrated.

The ophthalmological features consist of "angioid" streaks.[6] The exact cause of this remains unclear although vascular changes have been suggested. The loss of vision is probably due to alterations of retinal structures. Clinically this may present as no obvious change in vision to almost complete blindness. Our patient falls into the latter group, although he still retained gross vision.

The cardiovascular manifestations involve the smaller arteries of the extremeties and the coronary arteries. Asymptomatic occlusion of the ulna and radial arteries is a frequent finding. Coronary insufficiency due to medial calcification of the coronary arteries has been seen. Our patient appeared to have neither of these complications.

Pseudoxanthoma elasticum is an inherited disorder of connective tissue. The clinical manifestations probably vary from mild to severe, even resulting in death. Many patients with a "mild" variation of this disorder undoubtedly go unrecognized and live a "normal" life. Treatment is symptomatic and supportive.

Summary

A case of pseudoxanthoma elasticum with gastrointestinal bleeding is reported. The clinical manifestations and histological findings of this illness are reviewed. It is suggested that the gastrointestinal bleeding in this disease may be due to peptic ulcer.

References

1. Woo, J. C. and Chandler, F. W.: A Report of a Case of Pseudoxanthoma Elasticum with Gastrointestinal Hemorrhage. Ann. Intern. Med. 49: 215-222, 1958.
2. Whitcomb, F. F., and Brown, C. H.: A Report of 12 Cases of Pseudoxanthoma Elasticum with Massive Gastrointestinal Hemorrhage in One Patient. Ann. Intern. Med. 56: 834-842, 1962.
3. Berlyne, G. W.: Two Case Reports of Pseudoxanthoma Elasticum, Lancet 1: 77-80, 1960.
4. Goodman, R. M., et. al.: Pseudoxanthoma Elasticum: A Clinical and Histopathological Study. Medicine 42: 297-335, 1963.
5. McCaughey, R. S., Alexander, L. C., and Morrish, J. A.: The Gronblod-Standberg Syndrome: A report of three cases presenting with massive gastrointestinal hemorrhage during pregnancy. Gastroenterology 31: 156-160, 1956.
6. Conner, P. J., et al.: Pseudoxanthoma Elasticum and Angiod Streaks, A Review of 106 Cases. Am. J. Med. 30: 537-539, 1961.

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Dr. Sidney Branson, Windham, Maine referred this patient for study and furnished information regarding his course after discharge.

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Early Jaundice After Open-Heart Surgery–E. Lockey et al (National Heart Hosp, London)

Thorax **22**:165-169 (March) 1967

Two hundred thirty-two patients were studied. Hyperbilirubinemia was common, with clinical jaundice observed in 13%. The incidence was 55% where the mitral valve involvement was predominant, and 5% where the aortic valve was predominantly involved. It was less than 2% after repair of congenital lesions. The highest serum bilirubin value occurred between the second and tenth postoperative day. At total levels less than about 4 mg/100 ml the unconjugated fraction usually exceeded the conjugated. Serum alkaline phosphatase was normal in the first postoperative week but sometimes slightly raised in the second. Serum glutamic pyruvic transaminase (SGPT) was normal or very slightly raised; bilirubinuria was present. Centrilobular congestion with no evidence of extrahepatic biliary obstruction was found at postmortem examination, and liver biopsy in three very severely jaundiced patients revealed only intrahepatic cholestasis. Preoperative chemical evidence of liver dysfunction was found in 13 patients.

Ascending Saphenous Thrombophlebitis

ROWLAND B. FRENCH, M.D.

Superficial thrombophlebitis has to some extent in the past been relegated to a fairly unimportant position relative to degree of danger and need for further treatment. Zollinger[1] reported in 1964 the need for a more aggressive approach; he indicated that one out of ten patients with superficial thrombophlebitis developed pulmonary embolism. He suggested ambulation with elastic stockings if the phlebitis was below the knee; and phlebitis above the knee, not responding to compression and ambulation, should be treated by surgical ligation. He also noted thrombosis to the very orifice of the saphenous femoral junction where clinically the inflammatory process appeared to end just above the knee.

Herrmann[2] also reported in 1964 that a thrombosis of the superficial veins was associated with repeated disability, and with much confusion as to treatment. He suggested early excision of the inflammed vein with its blood clot through multiple small button hole incisions under local anesthesia as the therapy of choice, without vein stripping.

Hafner[3,4] reported thrombectomy as the therapy of choice if the thrombus extended into the femoral vein together with the division and ligation of saphenous trunk, and advised operation if the thrombus extended within 2-3 inches of saphenous femoral junction.

The following case, I believe, illustrates the necessity of vein ligation in saphenous thrombophlebitis above the knee and the difficulty of clinical evaluation based on the level of tenderness, redness and swelling.

Case Reports

This 59-year-old white male developed redness, tenderness and swelling on the medial aspect of the left leg extending just above and below the knee five days prior to being seen, but this had not been progressive over the previous two days. The diagnosis was made of superficial thrombophlebitis in a varicose saphenous vein. The patient was placed on rest, elevation and phenylbutazone (Butazolidin®) with continued gradual improvement. The area became less tender, less red and swollen, and had no progression cephalad of either redness or tenderness. However, despite improvement, it was felt in order to return the patient to work as soon as possible that ligation of the saphenous vein be accomplished, and the patient was admitted to the hospital after five days of conservative therapy. BP-160/80 – P 84 – R 20 – PE-essentially normal except for leg – Hemoglobin 15.5 gm. – W.B.C. 6,000 – Polys 71% – Lymphs 19% – monos 3% – eos 5% – baso 1% – Urinalysis Specific gravity 1.024 – Micro occasional WBC – Albumin O – Sugar O. Under local anesthesia, ligation of the saphenous vein flush with the saphenous femoral junction was performed and as long as possible portion of the saphenous vein was removed. Clinically, redness, swelling and tenderness ended in the thigh at 15 cm. distal to the saphenous femoral junction with no evidence of tenderness proximal to this point. However, at operation, the clot was found to extend to within 1 cm. of the saphenous femoral junction or 14 cm. above where any clinical evidence of clot was present. Upon opening the vein, the clot was found to be completely loose, unattached at any point in the approximately 4 cm. segment adjacent to the junction. Following operation, the symptoms subsided rapidly on no medication. The patient was ambulatory and able to return to work shortly. The patient had had moderately severe varicose veins for 10 to 15 years, not caring for operative procedure. In April 1964, he had had a similar clot in the other leg and the saphenous vein was also ligated at that time at the saphenous femoral junction because of clinical upward progression of symptoms. However, on the present occasion, the clinical manifestations were lower and appeared to be subsiding.

In another case, a female, age 23, about 2 months pregnant, had ascending superficial phlebitis of the left saphenous vein in the thigh. She also had ligation performed and did well. In these last two instances, the clot was not yet adjacent to the saphenous femoral junction at operation.

Many different forms of therapy have been advised in the past for superficial phlebitis including heat, elevation, Heparin, vein stripping and phenylbutazone. The case in point is presented largely to reemphasize the danger of pulmonary embolism in thrombophlebitis of the saphenous system above the knee. Whether clinically, the process is ascending or not, medical therapy is time consuming, with time loss from work, and dangerous; both from lulling one into a false sense of security and from still retaining the possibility of embolism. It is suggested that saphenous thrombopheblitis above the knee may be almost as dangerous as deep phlebitis in its immediate sequelae. Early ligation, at the saphenous femoral junction, should be seriously considered as the best form of treatment.

References

1. Williams, R. D. and Zollinger, R. W.: Surgical Treatment of Superficial Thrombophlebitis, Surgery, Gynec. & Obst. 118: 745, April 1964.
2. Herrmann, L. G.: Superficial venous thrombosis, J. Cardiovascular Surg., 5: 239, May-June 1964.
3. Hafner, C. D., Cranley, J. J., Krause, R. J. and Strasser, E. S.: Venous Thrombectomy, Ann. Surg. 161: 411-417, March 1965.
4. Hafner, C. D., Cranley, J. J., Krause, R. J. and Strasser, E. S.: A Method of Managing Superficial Thrombophlebitis, Surgery 55: 201, 1964.

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Comparison of Inconclusive Smears from Gynecological and Obstetrical Clinics of Johns Hopkins Hospital

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ABSTRACT

SKROCKA, Sister Mary Bernard C.S.S.F. (Cytopathology Laboratory, Johns Hopkins Hospital, Baltimore, Maryland), Comparison of inconclusive smears from Gynecological and Obstetrical Clinics of Johns Hopkins Hospital.

According to several authors, cervical cancer is a slowly evolving process through stages of varying epithelial cellular abnormalities. Exfoliated cells from all these "shades-of-gray" lesions are referred to as dyskaryotic cells which reflect the severity of the surface epithelium.

The incidence and morphology of cytological cellular atypias in Fast (combined cervical and vaginal) smears in pregnant and nonpregnant women of the same age group as seen in the Gynecological and Obstetrical Clinics of the Johns Hopkins Hospital in 1964 are compared.

There is a minimal difference in the incidence and morphology of dysplastic lesions in both groups. Therefore, pregnant and nonpregnant women should be treated similarly; that is, by close observation and with histological evaluation when indicated. Since it is not possible to predict the outcome of dysplasia, it is suggested that regardless of whether the patient is pregnant or nonpregnant, periodic routine smears followed by repeat smears and biopsies are of utmost importance when indicated.

INTRODUCTION

According to the American Cancer Society, in 1965 ten thousand women have died of cervical cancer in the United States. Though this figure has decreased by 50% within the last 25 years, there are still thousands of women who are not familiar with the "Pap" smear for early detection of cervical cancer. It is a generally accepted concept by several authors[1,2,8,10] that cancer of the cervix is a slowly evolving process through stages of varying epithelial cellular abnormalities. Papanicolaou[9] was the first to characterize this particular group of cellular abnormalities as dyskaryosis; that is, a state of abnormal nuclei. Frost[3] groups these abnormal cellular transitions as a dyskaryotic cell series or "shades-of-gray". Reagan et al[12] introduced the term dysplasia to designate lesions involving the dyskaryotic cell series of the cervix. It is the purpose of this paper to compare the incidence and morphology of these cellular atypias in Fast (combined cervical and vaginal) smears in pregnant and nonpregnant women of the same age group as seen in the Gynecological and Obstetrical Clinics of Johns Hopkins Hospital in 1964.

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TABLE 1

INCIDENCE ACCORDING TO CYTOLOGIC DIAGNOSIS OF ALL SMEARS FROM GYN AND OB CLINICS REGARDLESS OF AGE IN 1964

Category	*GYN Clinic*		*OB Clinic*	
	No.	%	No.	%
Unsatisfactory	75	1.9	25	0.9
Negative	3742	89.0	2299	92.0
Inconclusive	361	8.6	174	6.9
Positive	22	0.5	6	0.2
Total	4200	100.0	2504	100.0

These abnormal cervical lesions have been referred to in medical literature as atypical or irregular epithelium, anaplasia, metaplasia, hyperplasia or Basal Cell hyperactivity.[1,8,11,16] Basically, exfoliated cells from all these "shades-of-gray" lesions are referred to as dyskaryotic cells which reflect the severity of the surface epithelium. The round or oval nucleus of a dyskaryotic cell is large and hyperchromatic with a wrinkled nuclear membrane. The chromatin is minimally to moderately coarsely granular and evenly distributed. As the severity of the dysplasia increases, the ability of the cytoplasm of the dyskaryotic cell to mature decreases.[5] Elaborate and detailed measurements of cells and assessment of their morphologic features by Reagan et al, confirmed by Wied et al[14] brought forth significant differences in the morphology of normal, dyskaryotic and cancer cells.

At Johns Hopkins Hospital, upon screening a Fast smear, when the most severe cellular changes observed are interpreted as dyskaryotic cells, the specimen is classified as inconclusive for cancer. This indicates the necessity for further study and follow-up of the patient. This patient may have cancer, despite the fact that no cancer cells were seen on this particular smear, or she may have some degree of dysplasia. These lesions may not progress and may even revert to normal, while untreated cancer is not likely to do so.[1] It is believed by several authors[1,5,11] that dyskaryotic cells or dysplasia antedate cancer.

MATERIALS AND METHODS

During the year 1964, the Johns Hopkins Hospital Cytopathology Department has registered 4200 Fast smears from the Gynecological Clinic and 2504 from the Obstetrical Clinic. These clinics were chosen for

TABLE 2-A
FAST SMEARS FROM GYN CLINIC IN 1964

Category	Age 10-14 yrs.		15-19 yrs.		20-24 yrs.		25-29 yrs.		30-34 yrs.		35-39 yrs.		40-44 yrs.	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Unsatisfactory			3	1.2	1	0.2	13	2.2	6	1.1	8	1.5	11	2.3
Negative	19	100.0	223	88.5	415	88.0	503	86.0	477	89.0	475	89.5	442	92.0
Inconclusive			26	10.3	56	11.8	68	11.6	49	9.2	45	8.4	26	5.5
Positive							1	0.2	4	0.7	3	0.6	1	0.2
Total	19	100.0	252	100.0	472	100.0	585	100.0	536	100.0	531	100.0	480	100.0

TABLE 2-B
FAST SMEARS FROM OB CLINIC IN 1964

Category	Age 10-14 yrs.		15-19 yrs.		20-24 yrs.		25-29 yrs.		30-34 yrs.		35-39 yrs.		40-44 yrs.	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Unsatisfactory	1	2.0	5	0.9	6	0.7	7	1.3	4	1.3	2	1.2		
Negative	51	98.0	565	94.0	744	92.3	476	90.5	273	90.0	151	90.4	38	86.4
Inconclusive			33	5.1	55	6.9	42	8.0	24	7.7	13	7.8	6	13.6
Positive					1	0.1	1	0.2	3	1.0	1	0.6		
Total	52	100.0	603	100.0	806	100.0	526	100.0	304	100.0	167	100.0	44	100.0

comparison as they would include patients of the same socioeconomic status. As shown in Table 1, the inconclusive smears from the Gynecological Clinic number 361 or 8.6% in comparison to the Obstetrical Clinic which numbers 174 or 6.9%. There is no considerable variation in the rate of incidence.

For closer comparison in Table 2-A and Table 2-B, the Gynecological Clinic patients and the Obstetrical Clinic patients in the same age group are subdivided by age and grouped according to cytologic diagnosis. Here too, the incidence of inconclusive smears of nonpregnant patients compared with inconclusive smears of pregnant patients is slightly higher. However, as noted in Table 2-C, the inconclusive smears in the Gynecological Clinic, though increased to a high 11.9% in the 20-24 age group, gradually decrease to a low 5.5% in the 40-44 age group. The inconclusive smears in the Obstetrical Clinic, on the other hand, show a low 6.9% in the 20-24 age group, gradually increasing to a high 13.6% in the 40-44 age group. The sudden rise of the percentage of inconclusive smears in the Obstetrical Clinic because of the small number cannot be considered significant. However, it seems to be that pregnant women in the 40-44 age group are probably multiparous and might well have a higher incidence of atypical cell smears than nonpregnant women in the same age group.

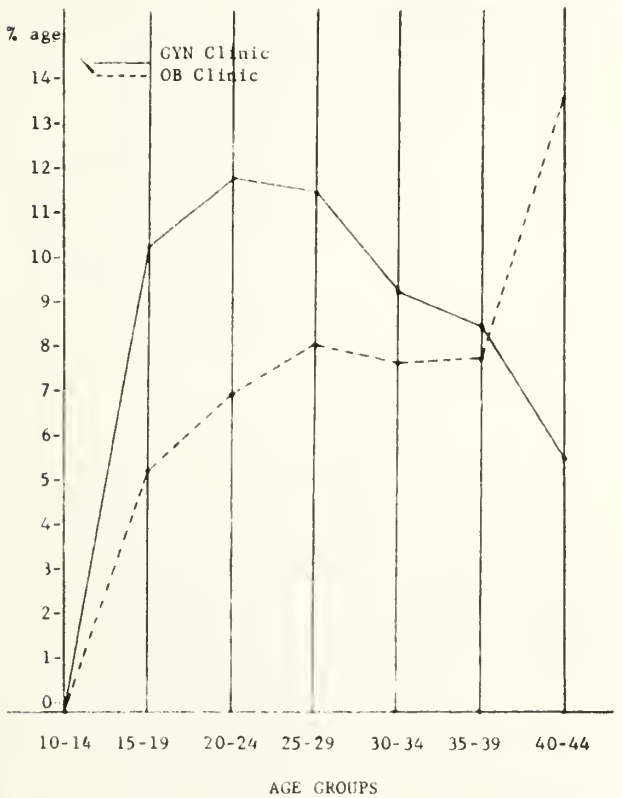
In the 25-29 year age group of the Obstetrical Clinic there were 526 smears. These are compared with the first 526 smears of the same age group from the Gynecological Clinic. The comparison of the 25-29 year age groups of the pregnant and nonpregnant women is shown in Table 3. It is to be noted that the total inconclusive category for cancer in the Gynecological Clinic in 12% compared with the Obstetrical Clinic 8%, indicating a 4% increase in the nonpregnant group. We must note that the patients from the Obstetrical Clinic are asymptomatic while it is a symptomatic patient who visits the Gynecological Clinic. Therefore, it is presumed that there would be a greater possibility of an inconclusive smear in the nonpregnant patient.

According to Moore and Taylor,[7] cervical lesions in pregnant women behave morphologically in a manner similar to that in which they behave in nonpregnant women in regard to subsequent course. They also found that dysplasia disappears or regresses in these patients with equal frequency in one-third to one-half of the cases. Therefore, there is no reason to restrict further pregnancies when the patient has a dysplasia, but these patients deserve a special place in follow-up clinic. At Johns Hopkins Hospital in 1964, the 173 inconclusive Fast smears from the Obstetrical Clinic (age group 10-44 years) were divided into first, second, and third trimesters and also six weeks postpartum (Table 4). There is an increase in inconclusive smears with marked bizarre cells in the second and third trimesters. The degree of dyskaryosis increased during pregnancy and began to regress by six weeks postpartum. Because of the changes that take place in the cervix during pregnancy, some of these conditions may become more florid,[13] regressing thereafter. It is to be questioned whether increased epithelial cellular abnormalities are due to marked proliferation of surface epithelium in pregnancy or related to high levels of endogenous estrogen or possibly, to high incidence of Trichomonas vaginalis and inflammation.[7]

As seen in Table 5, the presence of Trichomonas vaginalis is notably increased to a high 52% in the obstetrical patient, as compared to 35% in the gyne-

TABLE 2-C

COMPARISON OF PERCENTAGE OF INCONCLUSIVE SMEARS IN SAME AGE GROUPS FROM GYN AND OB CLINICS IN 1964



cological patient. This organism has a high incidence of association with both systemic and local conditions of great clinical significance.[4] It is of interest to note in Table 6, a moderate decrease of incidence of Trichomonas vaginalis in postpartum as compared with the incidence in each trimester of pregnancy.

Having reevaluated the first available 11 inconclusive smears from the Gynecological Clinic and the first 11 available inconclusive smears from the Obstetrical Clinic, the results are shown in Table 7-A and Table 7-B. As already mentioned and again noted in Table 7-A and Table 7-B, there is an increased incidence of Trichomonas vaginalis on smears from the Obstetrical Clinic. Coinciding with this is also the marked increase of inflammation in pregnant patients in comparison to the nonpregnant group. According to Koss,[6] Trichomonas vaginalis as an inflammatory agent may produce changes within the squamous epithelium of the cervix that are degenerate in nature and result in cytoplasmic vacuolization, nuclear enlargement, pyknosis and fragmentation. In 1963, Patten and Reagan[1] reported a work in which mice, repeatedly inoculated with Trichomonas vaginalis per vaginum showed impressive epithelial atypia. Frost[4] states that progressive epithelial cellular changes of regeneration in reaction to injury, of dysplasia and of neoplasia are frequently found together with regressive epithelial cellular changes of degeneration in association

TABLE 3

COMPARISON OF 25-29 AGE GROUP FROM GYN AND OB CLINICS IN 1964

Category	*GYN Clinic*		*OB Clinic*	
	No.	%	No.	%
Unsatisfactory	8	1.5	7	1.3
Negative	454	86.3	476	90.5
Inconclusive	63	12.0	42	8.0
Positive	1	0.2	1	0.2
Total	526	100.0	526	100.0

Number of Smears in OB Clinic = 526
These are compared with first 526 in GYN Clinic

TABLE 4

DEGREE OF ABNORMALITY ON INCONCLUSIVE SMEARS FROM OB CLINIC ACCORDING TO TRIMESTERS AND POSTPARTUM (Ages 10-44)

Inconclusive	*Trimester 1st*		*2nd*		*3rd*		*Postpartum*	
	No.	%	No.	%	No.	%	No.	%
Slightly bizarre cells	13	69	33	51	30	51	19	64
Moderately bizarre cells	5	26	21	32	19	32	7	23
Markedly bizarre cells	1	5	11	17	10	17	4	13
Total	19	100	65	100	59	100	30	100

TABLE 5

INCIDENCE OF TRICHOMONAS VAGINALIS ON INCONCLUSIVE SMEARS FROM GYN AND OB CLINICS IN ALL AGE GROUPS FOR 1964

Trichomonas vaginalis	*GYN Clinic*		*OB Clinic*	
	No.	%	No.	%
Negative	235	65	84	48
Positive	126	35	90	52
Total	361	100	174	100

TABLE 6

INCIDENCE OF TRICHOMONAS VAGINALIS ON INCONCLUSIVE FAST SMEARS FROM OB CLINIC ACCORDING TO TRIMESTERS AND 6 WEEKS POSTPARTUM (Ages 10-44)

Trichomonas vaginalis	*Trimester 1st*		*2nd*		*3rd*		*Postpartum*	
	No.	%	No.	%	No.	%	No.	%
Negative	7	37	36	55	23	39	18	60
Positive	12	63	29	45	36	61	12	40
Total	19	100	65	100	59	100	30	100

with the organism. According to Christopherson and Parker,[1] infestation with this organism can produce a degree of cytologic atypia. Underlying this obscuring and degenerate cellular pattern on the smear may be cancer cells. Therefore, having classified these smears as inconclusive due to the presence of cellular abnormalities, it is always recommended to clear the infection, to repeat smears and request a biopsy if indicated.

Having made up an index of normal cells versus dyskaryotic cells, the mean value of the N/D Index of

TABLE 7-A

STUDY OF 11 INCONCLUSIVE SMEARS FROM OB CLINIC AT JOHNS HOPKINS HOSPITAL FROM 1964

Case No.	**D.I.*	***N/D I*	*Trichomonas vaginalis*	*Inflammation*	*Cytologic diagnosis as reported*
64F723	0-47-53	62-38	+	4+	Markedly bizarre
64F2856	0-25-75	76-24	+	4+	Slightly bizarre
64F3712	4-61-35	74-26	–	3+	Markedly bizarre
64F4940	14-52-34	42-58	+	4+	Markedly bizarre
64F7342	0-28-72	62-38	+	4+	Moderately bizarre
64F8463	0-21-79	68-32	+	3+	Slight-moderately bizarre
64F9395	0-13-87	75-25	+	4+	Slightly bizarre
64F11626	0-65-35	72-28	+	4+	Slight-moderately bizarre
64F13458	6-65-29	88-12	+	3+	Moderately bizarre
64F13853	6-57-37	88-12	+	3+	Moderately bizarre
64F14030	5-25-70	74-26	+	4+	Slightly bizarre
Mean Value	3-42-55	71-29			

*D.I. – Dyskaryotic Index
**N/D I – Normal cells/Dyskaryotic cells Index N.B.
Trichomonas vaginalis is present in 10 out of 11 cases
Severe (4+) inflammation associated with 7 out of 11 cases.

TABLE 7-B

STUDY OF 11 INCONCLUSIVE SMEARS FROM GYN CLINIC AT JOHNS HOPKINS HOSPITAL IN 1964

Case No.	**D.I.*	***N/D I*	*Trichomonas vaginalis*	*Inflammation*	*Cytologic diagnosis as reported*
64F85	0-10-90	82-18	–	1+	Slightly bizarre
64F573	8-48-34	67-33	–	1+	Markedly bizarre
64F1102	5-44-51	95-5	–	3+	Markedly bizarre
64F1369	0-32-68	63-37	–	4+	Slightly bizarre
64F1463	2-47-51	90-10	+	3+	Slightly bizarre
64F2127	0-14-86	95-5	–	2+	Slightly bizarre
64F2722	2-61-37	87-13	+	3+	Moderately bizarre
64F3124	4-70-26	80-20	+	2+	Moderate-markedly bizarre
64F3783	3-41-56	83-17	–	1+	Moderately bizarre
64F3901	0-43-57	88-12	–	2+	Slightly bizarre
64F4236	2-39-59	77-23	+	2+	Slightly bizarre
Mean Value	2-42-56	82-18			

*D.I. – Dyskaryotic Index
**N/D I – Normal cells/Dyskaryotic cells Index N.B.
Trichomonas vaginalis is present in 4 out of 11 cases
Severe (4+) inflammation is associated with 1 out of 11 cases.

smears from the Obstetrical Clinic was 71%/29%, as compared to 82%/18% as the mean value from the Gynecological Clinic. There is but a slight variation in the precentage of dyskaryotic cells. However, due to individual range, this is probably not statistically significant.

The Dyskaryotic Index which is a ratio of the percentages of immature, moderately mature, and mature dyskaryotic cells,[13] has been evaluated on each of the 11 smears in Table 7-A and Table 7-B. This shows the degree of cellular abnormality of the cervical epithelium. There has been very little difference between the D/I of the pregnant and nonpregnant patient in relation to the cytologic diagnosis. Therefore, epithelial abnormalities are possible in the pregnant woman as well as the nonpregnant woman and should be treated in the same manner.

SUMMARY AND CONCLUSIONS

There is a minimal difference in the incidence of the "shades-of-gray" lesions or dysplasia in pregnant women and nonpregnant women. Consequently, both groups should be treated similarly; that is, by close observation and histological evaluation when indicated.

Trichomonas vaginalis is more prevalent on smears from the Obstetrical Clinic in comparison to the Gynecological Clinic. Since the organism may produce cellular atypia and degenerative changes, it would seem advisable to clear the infection and repeat the smear for better evaluation.

Increased inflammation, more frequently seen in pregnant women, and which might be obscuring cancer cells, should be cleared so that repeat smears might be evaluated.

Cellular morphology, that is, the Dyskaryotic Index, is found to be similar in relation to cytologic diagnosis in both pregnant and nonpregnant women.

Since cellular abnormalities of the uterine cervix have been demonstrated on 174 smears (6.9%) from the Obstetrical Clinic, it is to the advantage of the asymptomatic patient to have cytology of the genital tract studied during her pregnancy.

Since it is not possible to predict the outcome of dysplasia, it is suggested that, regardless of whether the patient is pregnant or nonpregnant, repeat smears and biopsies are of utmost importance when indicated.

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REFERENCES

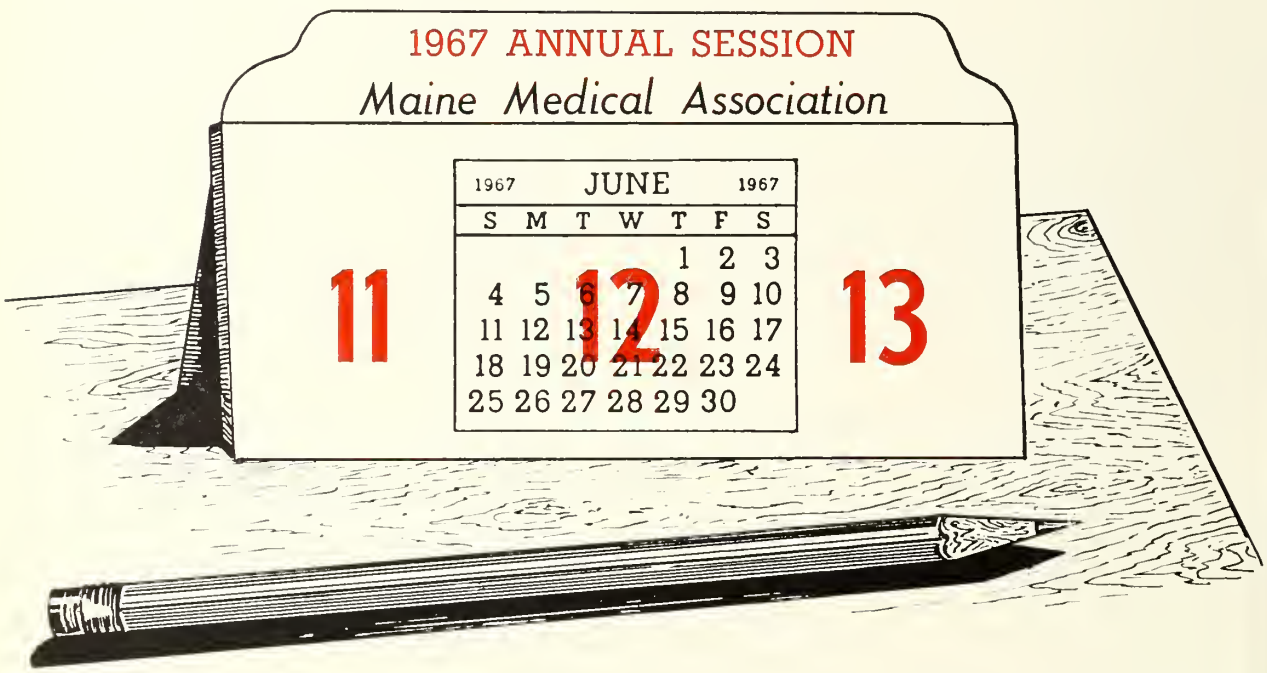
1. Christopherson, W. M., and Parker, J. E.: Carcinoma *in situ* Chapter 13 in Gray, L.: Dysplasia, Carcinoma in situ and Microinvasive Carcinoma of the Cervix Uteri. Charles C. Thomas, Springfield, Ill., 1964.
2. Frost, J. K.: Concepts Basic to General Cytopathology. 2nd ed., Johns Hopkins Press, Baltimore, Md., 1961.
3. Frost, J. K.: Cytology of benign conditions. Clin. Obstet. & Gynec., Dec. 1961.
4. Frost, J. K.: *Trichomonas vaginalis* and cervical epithelial changes. Ann. N.Y. Acad. Sci. 97: 792-799, 1962.
5. Frost, J. K.: Gynecologic and obstetric cytopathology. Chapter 35 in Novak, E. R., and Woodruff, J. D.: Gynecologic and Obstetric Pathology. 5th ed., W. B. Saunders Co., Phila., Pa., 1963.
6. Koss, L. G.: Cytologic diagnosis of carcinoma of uterine cervix. Chapter 9 in Gray, L.: Dysplasia, Carcinoma in situ and Microinvasive Carinoma of the Cervix Uteri. Charles C. Thomas, Springfield, Ill., 1964.
7. Moore, D. B., and Taylor, H. C.: The pregnancy problem. Chapter 17 in Gray, L.: Dysplasia, Carcinoma in situ and Microinvasive Carcinoma of the Cervix Uteri. Charles C. Thomas, Springfield, Ill., 1964.
8. Nieburgs, H. E.: The significance of tissue cell changes preceding uterine cervix carcinoma. Cancer 16: 141-159, 1963.
9. Papanicolaou, G. N.: Cytologic diagnosis of uterine cancer by examination of vaginal and uterine secretions. Am. J. Clin. Path. 19: 301-308, 1949.
10. Reagan, J. W.: Dysplasia of the uterine cervix. Chapter 12 in Gray, L.: Dysplasia, Carcinoma in situ and Microinvasive Carcinoma of the Cervix Uteri. Charles C. Thomas, Springfield, Ill., 1964.
11. Reagan, J. W., and Patten, S. F.: Dysplasia: A basic reaction to injury in the uterine cervix. Ann. N.Y. Acad. Sci. 97: 662-682, 1962.
12. Reagan, J. W., and Hamonic, M. J.: Dysplasia of the uterine cervix. Ann. N.Y. Acad. Sci. 63: 1236-1244, 1956.
13. Rubin, A.: Management of benign lesions of the cervix during pregnancy. Ann. N.Y. Acad. Sci. 97: 755-758, 1962.
14. Wied, G. L., Legorreta, G., Mohr, D., and Rauzy, A.: Cytology of invasive cervical carcinoma and carcinoma *in situ*. Ann. N.Y. Acad. Sci. 97: 759-766, 1962.
15. Williams, T. J., and Brack, C. B.: Carcinoma of the cervix in pregnancy. Cancer 17: 1486-1491, 1964.
16. Manual of Cytotechnology. National Committee for Careers in Medical Technology, 1962.

Development of a Computer-Assisted Instruction Program in a Medical Center Environment–W. G. Harless (Univ of Oklahoma Medical Center, Oklahoma City)

J Med Educ 42:139-145 (Feb) 1967

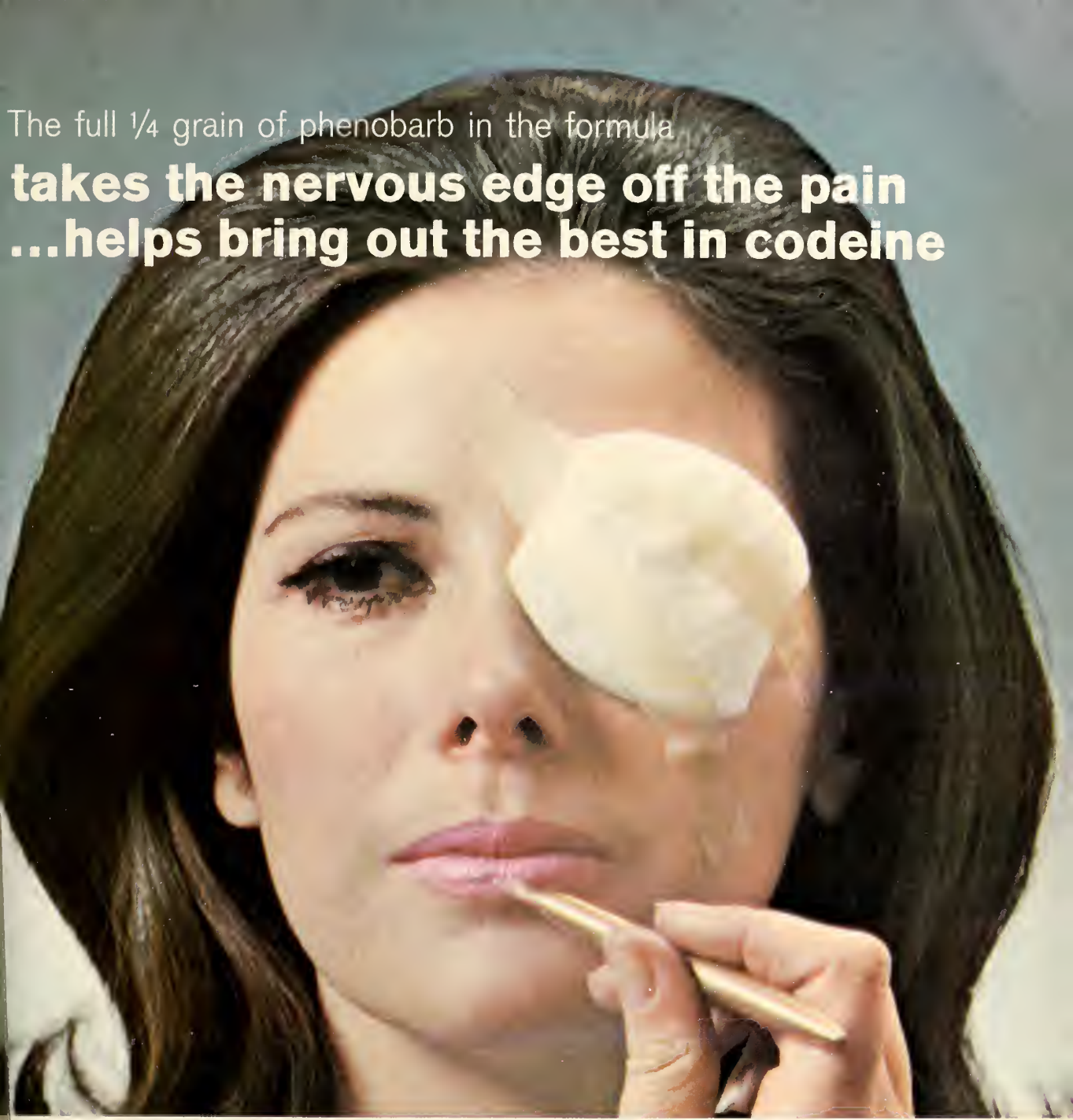
The student tutored by the computer has been severely restricted by the computer's lack of imagination concerning the interpretation of his response. This problem is finally nearing solution by use of the key letter and key word algorithms developed by programming theorists. A cardiologist at the University of Oklahoma Medical Center has prepared a course now being used by graduate students in the medical sciences. The course is called Medical Backgrounds and is designed to give the student some understanding of the fundamentals of the medical sciences. Medical etymology and terminology is certainly an important part of the course. The computer-aided instruction technique is used to present a preview of the terminology to be used in each lecture. After the lecture, the student is exposed to a review of that material at the terminal keyboard and, during the same session, is given a preview of the terminology of the subject matter.

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Phenaphen® with Codeine

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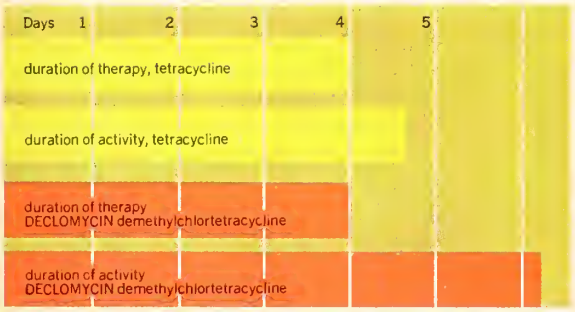
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one 300 mg tablet b.i.d.
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Effective in a wide range of everyday infections—respiratory, urinary tract and others—in the young and aged—the acutely or chronically ill—when the offending organisms are tetracycline-sensitive.

Contraindication—History of hypersensitivity to demethylchlortetracycline.

Warning—In renal impairment, usual doses may lead to excessive systemic accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort.

Precautions and Side Effects—Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. Use of demethylchlortetracycline during tooth development (last trimester of pregnancy, neonatal period and early childhood) may cause discoloration of the teeth (yellow-grey-brownish). This effect occurs mostly during long-term use but has also been observed in short treatment courses. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment. Side reactions include glossitis, stomatitis, proctitis, nausea, diarrhea, vaginitis and dermatitis. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy. Anaphylactoid reactions have been reported.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products.

Capsules: 150 mg; *Tablets:* film coated, 300 mg, 150 mg, and 75 mg of demethylchlortetracycline HCl.

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 Metamucil absorbs water and creates a soft, pliant fecal mass which is demulcent to mucosal surfaces.

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 Metamucil provides "smoothage" to prevent the formation of scybalous concretions and to lessen painful tenesmus.

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 Softening of the colonic content with Metamucil allays abrasive pressure and congestion at denuded postsurgical sites.

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 Metamucil minimizes both the pressure of strain on perineal structures and the physical irritation of hard masses on local lesions.



Usual Adult Dosage:

One rounded teaspoonful of Metamucil powder in a glass of cool liquid, or one packet of Instant Mix Metamucil in a glass of water. An additional glass of liquid is helpful.

Metamucil powder contains equal amounts of refined, purified psyllium and dextrose furnishing 14 calories and a negligible amount of sodium in each dose; available in containers of 4, 8 and 16 ounces.

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at the site of infection
(where it counts)...

Ilosone® provides more antibacterial activity than any other oral erythromycin

Acid stable, better absorbed ... Ilosone produces faster, higher, more prolonged blood levels, even in the presence of food[1-3]

Because it is the most active form of oral erythromycin, Ilosone can help assure consistently greater antibacterial activity at the site of infection. Ilosone produces peak antibacterial blood levels two to four times those of other erythromycin preparations.[1,2] Not only are these levels attained earlier, but they are maintained for much longer periods. Even the presence of food does not seem to affect the activity of Ilosone.[1,3]

In the treatment of patients with bacterial infections susceptible to erythromycin, Ilosone has compiled an excellent therapeutic record. Since it exerts its greatest activity against gram-positive organisms, it is particularly useful in common respiratory and soft-tissue bacterial infections. Ilosone kills—not merely inhibits—streptococci, pneumococci, and more strains of staphylococci than any other macrolide antibiotic. This bactericidal action, coupled with the high antibacterial levels attained, makes Ilosone especially valuable in patients with low host resistance, such as infants, debilitated individuals, and diabetics.

Ilosone has shown no cross-resistance with penicillin and may be effective against organisms that have become resistant to that agent. Despite its high antibacterial activity, Ilosone has demonstrated a low incidence of side reactions. Blood dyscrasias, ototoxicity, and tooth staining have not been observed. Infrequent cases of drug idiosyncrasy, manifested by a cholestatic jaundice, have occurred, but there have been no known definite residual effects.

700121

Ilosone®

Lilly

Erythromycin Estolate

(See next page for prescribing information.)

Ilosone®/ the most active oral form of erythromycin

Description: Ilosone is the most active form of oral erythromycin that has been developed. Because it is stable in acid, well absorbed, and excreted in lesser amounts in the bile, it provides faster, higher, and longer-lasting levels of antibacterial activity (ABA) in the serum, even when taken with food, than do comparable doses of erythromycin.

Indications: Ilosone is indicated in infections caused by microorganisms sensitive to its action (especially staphylococci, hemolytic streptococci, and pneumococci). The drug is therefore useful in a high proportion of bacterial diseases encountered in clinical practice and particularly in the treatment of bacterial infections of the upper and lower respiratory tract and soft tissues.

In the treatment of acute bacterial pharyngitis and tonsillitis, this antibiotic has promptly eradicated the bacteria (streptococci) and has produced a parallel prompt clinical improvement. There have been no group A beta-hemolytic streptococci resistant to this preparation. In beta-hemolytic streptococcus infections, treatment should be maintained for ten days to prevent the development of rheumatic fever or glomerulonephritis.

Erythromycin estolate has proved to be very effective in pneumococcus pneumonia and in acute bronchitis with pneumococci on culture. Bronchopneumonia and otitis media in children have responded well to its use.

The antibiotic has been used very successfully in staphylococcus infections. Good therapeutic results have been obtained in soft-tissue infections, abscesses, cellulitis, carbuncles, wound infections, and furunculosis.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents. As is the case with any treatment regimen used in these severe conditions, surgical procedures should be performed when indicated, and large dosages of the antimicrobial agents should be employed. In this fashion, Ilosone has been effective in staphylococcus pneumonia, osteomyelitis, septicemia, empyema, and meningitis.

Multiple 500-mg. doses of the drug have been useful in gonorrhea and syphilis. Since penicillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with preexisting liver disease or dysfunction.

Side-Effects: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have appeared in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly if the drug is readministered to sensitive patients, usually within forty-eight hours. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a second time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small compared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extrahepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeared to be definitely related to use of the drug, laboratory findings were characterized by increased direct-reacting bilirubin, elevated alkaline phosphatase levels, negative or weakly positive cephalin flocculation and thymol turbidity tests, elevated serum glutamic oxalacetic transaminase levels, peripheral eosinophilia, and normal cholecystograms.

Individual idiosyncrasy seems evident since jaundice has not been reported in other patients taking prolonged courses of the medication. Patients with chronic infection have been given 1 to 2 Gm. of the drug daily for periods of two to six months, and patients with rheumatic fever have taken prophylactic doses of 0.5 Gm. daily for two years without difficulty. In one group of 144 patients who received the drug daily for two years, no jaundice was noted. It was of interest that members of six of these patients' families, who were not taking the drug, had episodes of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels were determined in a group of fifty-four adults and children who took 250 mg. of Ilosone daily for an average of sixteen months as rheumatic fever prophylaxis. The results were compared with those of a similar group of forty-four patients who received penicillin. There were no cases of jaundice in either group. Elevation of SGPT and serum alkaline phosphatase levels during the course of treatment was observed in one patient treated with Ilosone and in two patients treated with penicillin. Seven other patients in the group receiving Ilosone and four others in the penicillin group showed elevations in one of the tests at some time during administration of the drugs.

Very satisfactory therapeutic results, without toxicity, were reported in 102 pediatric patients who received short-term (ten day) courses of Ilosone in the treatment of streptococcus infections. Results of liver function tests in these patients were comparable to those in a similar control group who had received penicillin.

Gastro-intestinal disturbances not associated with hepatic effects are observed in a small proportion of individuals as a result of a local stimulating effect of the medication on the alimentary tract; however, the normal intestinal gram-negative bacteria flora is not appreciably altered by erythromycin drugs.

Although allergic manifestations are uncommon with the use of erythromycin, there have been occasional reports of urticaria, skin eruptions, and, on rare occasions, anaphylaxis.

Administration and Dosage: Ilosone is administered orally.

Ilosone Pulvules®
Ilosone Chewable Tablets
Ilosone Drops
Ilosone, 125, for Oral Suspension

For infants and for children under twenty-five pounds of body weight, the usual dosage is 5 mg. per pound every six hours; for children twenty-five to fifty pounds, 125 mg. every six hours. (Tablets Ilosone Chewable should be chewed or crushed and swallowed with water.)

For adults and for children over fifty pounds, the usual dosage of Ilosone is 250 mg. every six hours.

For severe infections, these dosages may be doubled.

When larger doses are indicated, parenteral erythromycin therapy should be considered.

In the treatment of syphilis, the recommended total dosage is 20 to 30 Gm. given in divided doses for a period of ten to fifteen days. Close follow-up of the patient is necessary since erythromycin drugs have not had adequate evaluation in all stages of syphilis. Examinations of spinal fluid are recommended as part of the follow-up therapy.

For gonorrhea, 500 mg. four times a day for four days is recommended. In the treatment of gonorrhea, patients with suspected lesion of syphilis should have a dark-field examination before receiving antibiotics, and monthly serologic tests should be made for a period of three months.

How Supplied: Pulvules Ilosone, Capsules, N.F., 125 and 250 mg. (equivalent to base), in bottles of 24 and 100.

Tablets Ilosone Chewable, N.F., 125 mg. (equivalent to base) in bottles of 50.

Ilosone Drops, 5 mg. (equivalent to base) per drop, in 10-cc. size packages, with dropper calibrated at 25 and 50 mg.

Ilosone, 125, for Oral Suspension, N.F., 125 mg. (equivalent to base) per 5-cc. teaspoonful, in 60 and 150-cc.-size packages.

References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:69, 19
2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:398, 19
3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198, 196

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DEAN H. FISHER, M.D.
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Salmonellosis

CHARLES H. OKEY, Ph.D.*

Salmonellosis is the term used presently for the enteric infections caused by members of the genus Salmonella. The rapid increase in reported cases and the prediction by authorities that the increase will continue, has led the U. S. Public Health Service, state health departments and other involved people to focus attention on the problem and to employ methods for control. The number of cases reported in 1960 was 7,000; in 1965, 20,000 cases were known to health departments. The projected estimate for 1970 is 100,000. There is general agreement these reported cases constitute only one to two percent of the total actual number of people affected by salmonellosis each year. This would mean anywhere from 2,000,000 to 4,000,000 people are actually affected by the disease annually. As efforts are made to assess the importance of salmonellosis, it is obvious that the problem is large and is growing but that control measures are known and only need to be brought to bear in order to minimize its impact on health.

The Salmonellae were described first in the last half of the nineteenth century, both as pathogens for man and for animals. The name was taken from Dr. D. E. Salmon, a veterinarian in the Bureau of Animal Industry, U. S. Department of Agriculture. The number of serotypes, or distinct causes of disease, number well over one thousand at the present time. Their distribution is widespread in animals and man. An estimated 0.5% of humans harbor one or more of the serotypes in their intestinal tract and can serve as reservoirs of infection. The percentage of carriers in the animal population is much higher and it is from these sources, through the use of animals and animal products as food, that man receives the infecting dose of Salmonellae.

Salmonellae are thought to have been in man's environment for as long as man has been in existence. A few of the group, Salmonella typhi and paratyphi, S. schottmulleri and S. hirschfeldii, the respective causes of typhoid fever and the paratyphoid fevers, have become host-adapted in relation to man so that they produce a severe systemic disease. The serotypes that are host-adapted to animals but not to man produce a milder and shorter duration illness in man and it is these organisms with which there is concern at present.

Salmonellosis cases exhibit symptoms of acute gastroenteritis twelve to forty eight hours after ingestion of contaminated food. For the average healthy adult, the number of organisms ingested must be considerable, probably in excess of 100,000. The very young, the aged and those debilitated for various reasons, show a heightened susceptibility so that the infecting dose must be much smaller. The severity of symptoms range from mild abdominal discomfort with a minimum of diarrhea, lasting less than a day, to a severe and protracted illness. A typhoid-like illness may occur due to a Salmonella serotype other than the typhoid bacillus. Focal manifestations may occur either as part of a septicemia or as isolated abscesses. These may occur in almost any body part but particularly in the appendix, gallbladder, urinary tract and joints. Foci may occur also in the respiratory tract, heart valves, and central nervous system.

Laboratory diagnosis depends upon the isolation of the salmonella serotype from fecal specimens or other appropriate materials. A variety of plating media and an enrichment broth planted simultaneously is the most efficient means of isolation. It may be necessary to culture the stool or other source on several occasions before success in isolating the organisms is obtained. Confirmation of the isolated organism in the Public Health Laboratory is urged in strongest terms. Many isolates resemble the Salmonellae superficially and it is only by using a wide variety of specialized culture media, available in this laboratory, that identification is possible. Furthermore, Salmonellae confirmed in this laboratory are submitted to Dr. Melvin Gershman, University of Maine, for definitive study by serologic methods. This step yields the serotype designation which is basic to epidemiologic studies. Finally, serotypes are reported on a weekly basis, to the Salmonella Surveillance Unit of the National Communicable Disease Center, U. S. P. H. S., Atlanta, where data on these organisms are summarized, analyzed, published and distributed to health agencies throughout the country. It is from these data that clues

*Director, Public Health Laboratory

may be found leading to the discovery of outbreaks of salmonellosis having their origin in food products distributed in interstate commerce.

Attempts to diagnose salmonellosis by serologic methods is of dubious value. Repeated studies have shown that the antibody response in typical gastroenteritis cases is far too erratic to be dependable. All efforts in laboratory diagnosis should be directed toward isolation of the organism from the stool, except in the less frequently encountered septicemia, which indicates the necessity of blood culture.

Symptomatic treatment with fluids and bland diet is usually sufficient in almost all cases. Only if the illness persists for more than three days or evidence of septicemia or other complications is seen, should antimicrobial therapy be considered. Furthermore, the choice of an antibiotic should be based on the kind of organism found in the cultures. Penbritin® (Ampicillin) and Chloromycetin® (chloramphenicol) are the drugs of choice at the present time. Antibiotics have little if any effect on the recovery of the salmonellosis patient whose illness is uncomplicated. If the twin goals of clinical recovery and elimination of the Salmonellae are the objectives, antibiotic therapy has been shown to have a contrary effect on the carriage of the organisms in the gastrointestinal system. Controlled studies have shown that antimicrobial therapy fosters the persistence of Salmonellae. These individuals are hazardous to their associates, particularly if they are food handlers. Most patients will have negative stools in three to four weeks. About 5% will continue to have positive stools for a longer period and about 0.25% will become chronic carriers. Stool surveys of groups simultaneously ingesting food contaminated with Salmonellae show that the carrier state may result in individuals who show either mild illness or even complete absence of symptoms.

Following recovery, stool cultures should be made in individuals who are food handlers to establish whether they are carriers. Health regulations require negative cultures on stool specimens taken on each of three consecutive days before returning to work in the food industry.

The epidemiology of salmonellosis is a continuing investigation. It was believed, for many years, that animals and man were the important reservoirs for Salmonellae. These species served as direct sources of contamination for food which, if improperly cooked and inadequately refrigerated, was consumed with resultant illness. Now it is known that the sources are almost endless in variety and that Salmonellae are all but ubiquitous. The organisms have been isolated from many animals including all the domestic varieties such as cattle, sheep, swine, poultry and other avian species, and particularly dogs and cats who harbor the bacteria at a 30% rate. Many insects have yielded the organisms. Foods shown to carry Salmonellae are poultry and poultry products, beef, pork, dried milk, smoked fish, thyroid powder, granulated pepsin, dried liver powder, cake mixes, special dietary products and yeast tablets. Quite recently, carmine dye used both as food coloring and as a tracer element in intestinal studies yielded the bacteria on examination by culture studies.

In an era when foods were simple, locally produced and distributed, contaminated food stuffs affected people in small numbers in a restricted area. Now that food technology has progressed to the present state, processing is more sophisticated and distribution is regional or even national. The potential for widespread epidemics of salmonellosis is considerable. Control, as pointed out before, is possible with measures now available. To understand the control measures that must be uniformly and rigidly applied, some facts about foodstuffs must be described.

Protein and its constituent, nitrogen, is the basic ingredient of all animal feed from the nutritional point of view. The supply of protein is limited and becoming increasingly so. Every possible source of this nutrient is being used in modern feeds. Tankage, offal from packing plants and fish are the principle forms of protein that are currently utilized. The processes of preparing the raw materials in suitable form for animal feeds do not now always yield a salmonella-free product. It is through a lack of interest or economic incentive that suppliers do not eliminate the bacteria in the initial processing, or if the very nature of the process does eliminate the Salmonellae, they fail to prevent the reintroduction of the organisms into the protein materials before shipment. Suppliers of animal by-products take the view these products do not require sanitary handling because they are intended for animal rather than human consumption. To follow the Salmonellae on their way to the human gastrointestinal system, it is only necessary to list the stages through which they pass: viable bacteria in raw materials which go into protein supplements, animal feedstuffs mixed with supplement to increase the protein content, animals receiving these feeds either develop clinical illness or harbor the organisms in their intestinal tracts, animals carrying Salmonellae contaminate a significant percentage of all carcasses during processing in food plants, man receives contaminated food.

Processors of human food recognize the almost impossible goal of producing salmonella-free products until the raw materials of their industry are likewise clean. In turn, the animal feed manufacturers say the same thing about the protein supplement supplies. In recent months, the federal Food and Drug Administration has concerned itself with this latter problem and has formally notified the industry that any animal by-product intended for animal feed and found to be contaminated with salmonella, is adulterated and subject to seizure. If these measures result in their intended objective of salmonella-free animal by-products, we may have reached the stage where the primary chain of transmission for salmonella from animal-derived food will be broken.

In the interim, before the goal is reached, the homemaker and the hospital dietitian can go a long way to-

Continued on Page 94

A BLUE SHIELD REPORT to DOCTORS



REPORT # 1

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Maine Heart Association Notes

116 State Street, Augusta, Maine

Diabetes and Myocardial Infarction

. . . there is general agreement that hyperglycemia is a common occurrence after infarction and that more often than not this hyperglycemia is transitory.

. . . In a high proportion of cases acute myocardial infarction is followed by an immediate disturbance of carbohydrate metabolism manifested by hyperglycemia. . . . this will be demonstrated only by postprandial tests or glucose tolerance tests, not by fasting blood sugar tests. The metabolic abnormality usually disappears within a few days; . . . Nevertheless, a substantial percentage of the patients with hyperglycemia after myocardial infarction ultimately prove to have real diabetes.

The practical conclusions . . . are clear. Any patient who has a myocardial infarction should have a postprandial blood sugar test. If it is above normal, he should, from then on, have lifetime surveillance. The prudent physician will advise the usual dietary precautions for protection against the development of active diabetes.

In summary, the discovery of hyperglycemia after myocardial infarct need be no cause for pessimism, but it should alert the physician and the patient to the need for precautions.

Submitted by Jacob B. Dana, M.D., Maine Heart Association.

Reference — Editorial, The New England Journal of Medicine, Vol. 276, page 296, 1967.

AMERICAN CANCER SOCIETY - MAINE DIVISION, INC.

Brunswick, Maine

1967 Scientific Session of the American Cancer Society
Sheraton-Dallas Hotel, Dallas, Texas
May 3, 1967

Theme: Current Concepts in Etiology and Diagnosis of Cancer

Morning Session, 9:00-12:00 Noon

Viruses and Vaccination in Cancer
JAMES T. GRACE, JR., M.D., Assistant Director, Roswell Park Memorial Institute, Buffalo, New York

Carcinogenic Effects of Tobacco Usage
OSCAR AUERBACH, M.D., Senior Medical Investigator, Veterans Administration Hospital, East Orange, New Jersey

Carcinogenic Effects of Solar Radiation and Prevention Measures
ROBERT G. FREEMAN, M.D., Associate Professor of Dermatology, Baylor University College of Medicine, Houston, Texas

The Carcinogenic Hazards of Diagnostic and Therapeutic Radiation
JUSTIN J. STEIN, M.D., Professor of Radiology and Chief, Radiation Therapy Division, University of California Medical Center, Los Angeles, California

The Carcinogenic Hazards of Atomic Radiation
ELBERT DECOURSEY, M.D., Director of Research, Trinity University, San Antonio, Texas

Chemical Carcinogenesis
PAUL KOTIN, M.D., Scientific Director for Etiology, National Cancer Institute, Bethesda, Maryland

Afternoon Session, 1:00-5:00 P.M.

What Constitutes an Adequate Periodic Health Examination?
EMERSON DAY, M.D., Director, Strang Clinic, New York, New York

The Case for Periodic Cancer Detection Examinations
VICTOR A. GILBERTSEN, M.D., Assistant Professor of Surgery and Director, Cancer Detection Center, University of Minnesota, Minneapolis, Minnesota

An Evaluation of the Annual Checkup
THOMAS W. CLARK, M.D., Director, University of Pennsylvania Diagnostic Clinic, Philadelphia, Pennsylvania

Proctoscopy for Cancer Detection in Asymptomatic Patients — What Age and How Often?
ROBERT J. ROWE, M.D., Doctors Building, 3707 Gaston Avenue, Dallas, Texas

The Barium Enema in Cancer Checkups — Indications and How Often?
ROBERT D. MORETON, M.D., Assistant to the Director and Professor of Radiology, The University of Texas, M.D. Anderson Hospital and Tumor Institute, Houston, Texas

The Pap Smear — What Technique and How Frequent?
W. A. D. ANDERSON, M.D., Chairman, Department of Pathology, University of Miami School of Medicine, Coral Gables, Florida

Present Role of Cytology in Cancer Detection (exclusive of Uterine Cancer)
WILLIAM M. CHRISTOPHERSON, M.D., Professor and Chairman, Department of Pathology, University of Louisville School of Medicine, Louisville, Kentucky

Mammography for the Detection of Breast Lesions
ROBERT L. EGAN, M.D., Chief, Mammography Section, Emory University Clinic, Atlanta, Georgia

Thermography and Zerography in Breast Diseases
JACOB GERSHON-COHEN, M.D., Director, Department of Radiology, Albert Einstein Medical Center, Northern Division, Philadelphia, Pennsylvania

Lymphangiography in the Diagnosis of Cancer
HARRY W. FISCHER, M.D., Director of Radiology, Wayne County General Hospital, Eloise, Michigan

The Use of Radioisotopic Agents in the Diagnosis of Cancer
NORMAN B. ACKERMAN, M.D., Ph.D., Assistant Professor of Surgery, Boston University Medical Center, University Hospital, Boston, Massachusetts

Sessions are open to all members of the Medical Professions and Students.
No advance registration or registration fee.

Necrology

Heinrich S. Baar, M.D., Ph.D.
1892 - 1967

IN MEMORIAM

Heinrich S. Baar, M.D., Ph.D., was born at Jagielnica, then part of the Austro-Hungarian Empire, on February 15, 1892. He died in Birmingham, England, on February 21, 1967.

Following his early education in Tarnopol, he attended the University of Vienna and received a doctorate of philosophy in 1914. Dr. Baar began his professional writing at the age of 20, when he was working in the Biological Stations of Trieste and Lunz am See. After a short service in the Austrian Army, he studied medicine in Vienna and was awarded the doctor of medicine degree in 1919.

During the 1920's and 30's, he was a consultant pediatrician, a research fellow, and became head of the Infants' Department at the Children's Hospital in Vienna. In later years, Dr. Baar served as pathologist at hospitals in Austria, England, and the United States, and, during that time, he authored more than 100 articles. In 1958, he became director of pathology at Pineland Hospital and Training Center at Pownal, Maine, and remained there until his retirement in 1965.

Much of his research dealt with pathology of the blood, and in 1960, he edited an important textbook entitled "Disorders of the Blood and Blood Forming Organs in Childhood." Dr. Baar was elected a "Founder Fellow" of the College of Pathologists, London, England, in 1964. He was an honorary member of the British Pediatric Association, a member of the Association of Physicians in Vienna, and the Royal Society of Medicine, and several other medical societies.

Dr. Baar was a scientist of rarely found brilliance. His dissertations were knowledgeable, inclusive, exacting, and masterful. Both his knowledge of scientific literature and his powers of recall deeply impressed those who had the privilege of working with him. Born into an age that saw the beginning of the great medical discoveries, he developed an intellectual curiosity that permeated his entire being. He will be remembered by his friends with respect and fondness, and, perhaps, as a rare phenomenon of intellectual perfection.

Peter W. Bowman, M.D.

County Society Notes

CUMBERLAND

The Cumberland County Medical Society met at Valle's Steak House in Portland, Maine on March 16, 1967 with eighty-five members and guests attending.

Following a social hour and dinner the President, Charles W. Capron, M.D. called the meeting to order. Dr. Capron announced the appointment of David K. Lovely, M.D. to the Policy Advisory Committee of the County Commissioners and the appointment of Albert Aranson, M.D. to another term on the Maine Medical Association Health Insurance Committee. The membership voted that Thomas F. Conneen, M.D. would be a delegate to the Maine Medical Association House of Delegates to complete the slate for 1967.

William L. MacVane, Jr., M.D., Program Chairman, introduced a panel of faculty members from Westbrook Junior College who discussed the two-year nursing program which has been started at that school. Mr. Edward Blewett, President of the College, gave the history and background of the program, both nationally and locally; Dean Richard Bond described the integration of the nursing program with the general academic and social activities of the College; Mrs. Claudia Watson, head of the Nursing Department, told of the marked changes which have taken place in training nurses and how these changes have been reflected at Westbrook Junior College. Each of the speakers emphasized that this course will graduate girls who will be prepared for the R.N. examinations and who will work as bedside nurses, not nurse educators or as practical nurses.

George E. Sullivan, M.D., President of the Maine Medical Association, discussed bills being considered by the present State legislature which are of medical concern. He also pointed out that there is some difference of opinion in the medical and educational fields as to the effectiveness of the two-year vs the three-year nursing program and he expressed hope that, with such a shortage of nurses, we would encourage conventional nursing courses as well as the newer ones.

Howard P. Sawyer, Jr., M.D. discussed the proposed legislation referable to blood banks and indicated that the proposed non-profit commercial organization would duplicate existing facilities. Sumner E. Moulton, M.D., Chairman of the Utilization Committee for Extended Care Facilities, again asked for more information regarding the patients his committee must evaluate. He also emphasized the present policy that those eligible are persons who can obtain some benefit from skilled nursing care and pointed out that each patient will not necessarily be eligible for the full 100 days of care.

Stanley B. Sylvester, M.D., *Secretary*

ANDROSCOGGIN

A meeting of the Androscoggin County Medical Association was held at St. Mary's General Hospital in Lewiston, Maine on February 16, 1967.

The meeting was called to order by the President, Daniel R. Shields, M.D. with nineteen members present.

The proposal of Paul J. Fortier, M.D. regarding "privileged communication between the physician and his patient" was approved. This proposal is to be sent to Dr. Hanley to be placed on the agenda of the Interim Meeting of the Maine Medical Association House of Delegates.

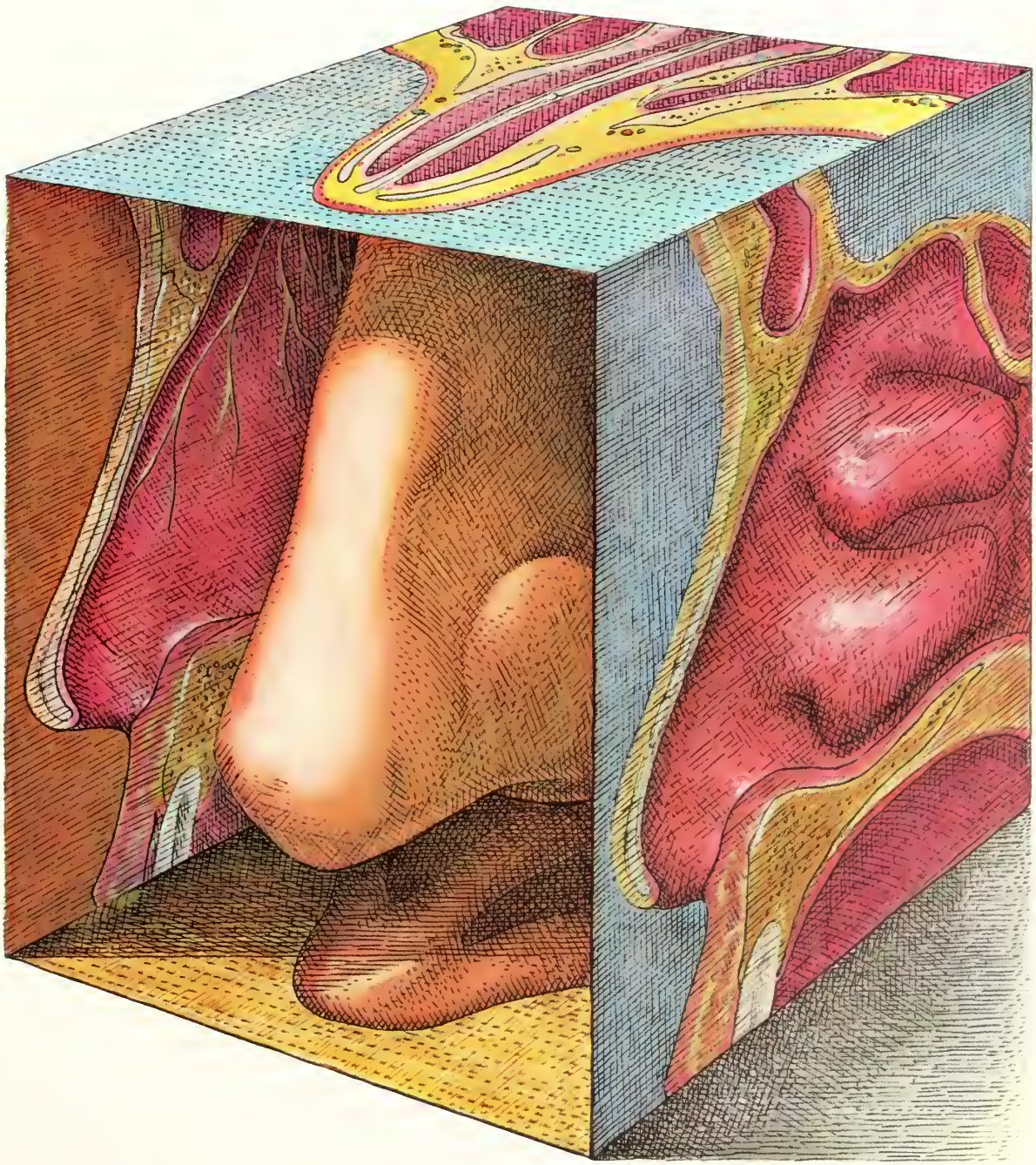
Dr. Shields discussed the December meeting with lawyers and the Medical-Legal Cooperation Agreement. It was voted to accept this agreement.

Eustache N. Giguere, M.D. read a resolution on the death

DORSEY

Season

A journal within a journal published quarterly in the interests of better medicine by Dorsey Laboratories, a division of The Wander Company, Lincoln, Nebraska. Address communications to Raymond C. Pogge, M.D., Director of Medicine.



this issue: the ubiquitous world of summer allergies



the ubiquitous world of summer allergies

Donald L. Unger, M.D. • Clinical Assistant Professor, Department of Medicine (Allergy), Stritch School of Medicine (Loyola).

In the Spring a young man's fancy lightly turns to thoughts of—allergies. This is at least true of the 10% of the population who have hay fever and the 4% who have asthma.[1] The snow melts, the trees blossom and the noses run. Patients who were fine all winter may not be enthralled by the sight of the first robin or the blossoming of a crocus, for their appearances may precede the "sneezin' season."

Allergies in general can be divided into winter allergies and summer allergies. In the winter the main problems are inside the house: e.g. dogs, cats, dust and feathers. Houses in the northern half of the country become so dry that it becomes essential to add humidity to the home; this is a far cry from the damp summer months with the moldy basements and need for dehumidifiers.

Early in April trees begin to pollinate, with each tree having about a two week period of pollination. A particular patient may be sensitive to only one tree and thus have his hay fever for such a short time that he thinks he has a cold.[2] The entire tree season starts about April 1 and ends about Memorial Day, although all hay fever seasons are blurred and prolonged in the southern part of the country. Tree pollen is usually very heavy and a person may well have most of his exposure from those trees immediately surrounding his home.

Grasses pollinate from about May 15 until July 4, and cause "rose fever." Grass pollens are somewhat lighter and more buoyant than tree pollens, and are much more ubiquitous. While there are several varieties of grasses in the United States, they are so closely related antigenically that a person sensitive to one is generally sensitive to them all.[3] Thus, while the tree season is really several small seasons intertwined, the grass season will usually result in symptoms for a more prolonged period. Obviously, a grass-sensitive patient will have trouble only when grass is pollinating—he will have to think of another excuse not to mow the lawn after July 4.

Ragweed is the "Big Daddy" of them all in the eastern two-thirds of the country. Pollination is generally from mid-August until the end of September, with the predicted lower counts and longer seasons



in the southern part of the country. Ragweed is a very light pollen which may be windborne for hundreds of miles. An interesting study was made in New York City, in which 90% or more of the ragweed plants were destroyed in three of the five boroughs; pollen counts done during the season were virtually identical in all five.[4]

Ragweed is, of course, the most common cause of hay fever and is associated with an incredible loss of man hours from work each year. Many is the patient who travels to areas where the pollen count is low, just to avoid having symptoms. There is no ragweed anywhere in the world except the United States and portions of Canada and Mexico.

While molds are present through the year, the most important ones predominate from April until November. An old wives' tale has ragweed ending with the first frost, when actually it ends a good month earlier. It is Alternaria—the kingpin of the molds—that meets a sudden demise with the first frost. Alternaria-sensitive patients are in their glory when there is snow on the ground, and might be ideally suited to man the radar stations in Alaska. In September and October, Alternaria counts are at their highest, perhaps associated with the burning of leaves. Other molds such as Hormodendrum and Helminthosporium are associated with the warmer weather, as opposed to Penicillium and Aspergillus which are household molds.

Summer also means the return of our much maligned associates—bugs. Insects cause allergic symptoms by two methods: the bite or sting of the Hymenoptera group, and the inhalation of particles of the bodies of various insects. Wasp stings are the oldest known form of allergy, as they caused the death of one of the pharaohs in ancient Egypt.[5] Bees, wasps and hornets account for many deaths in this country, and those sensitive to them should carry special treatment kits at all times; a few minutes delay in the administration of epinephrine to such a patient, might be the difference between life and death. Inhalation of particles of insects may cause sneezing and wheezing in a susceptible individual.[6] Both of these forms of insect allergy may be benefitted by hyposensitization.

The insect recognizes no professional bounds. He is as apt to bite the physician as the patient. So this season, beware of bugs. And beware, too, of poison ivy. That pleasant stroll through the woods and underbrush with the Boy Scouts might turn into a

(Concluded on following page)

to relieve summer allergies

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nightmare for the botanically uninitiated in the causes of rhus dermatitis (poison ivy, poison oak and poison sumac). Although you may have been careful, your dog may not have noted that it wasn't clover he jumped through, but poison ivy. His return to your side may give you the rhus dermatitis that you so carefully avoided. That heavenly campfire may be emitting particles of rhus oil to produce an airborne contact dermatitis of the exposed areas of the body.

Another fascinating, but rather infrequent type of summer allergy is physical allergy. Some people sneeze on exposure to sunlight, while others break out in rashes, usually on the exposed parts of the body. These rashes may well follow the administration of various photosensitizing drugs, e.g. demethylchlortetracycline.[7] Another form of physical allergy and one that may be lethal in the summer, is cold allergy. Yes, I mean cold allergy, not heat allergy. The cool dip on a hot day with its consequent sudden chilling of the body, may be the coup de grace for a cold sensitive patient.[8] It is customary to write "heart attack" on the death certificate, even though the victim may have been an 18-year-old boy who looks like a Greek god.

Lest the reader be depressed by this saga of afflictions associated with the warmer months, perhaps he should remember that it is also a time for swimming, baseball, lying in the sun and taking that long-planned vacation. So let's all join in a chorus of "In the Good Old Summertime," as we sneeze, wheeze and scratch. Be careful of your suntan lotion, however; it may cause you a contact dermatitis.

References 1. Unger, L.: Bronchial asthma. Charles C. Thomas Co. p. 47, 1946. 2. Samter, M.: Immunological diseases. Little, Brown and Co. p. 513, 1965. 3. Wodehouse, R. P.: Antigenic analysis by gel diffusions: 2. Grass pollen. Int. Arch. Allerg. **6**:65, 1955. 4. Cohart, E. M., and Kandle, R. P.: The Effects of a ragweed control program on ragweed pollen counts, J. Allergy **30**:287, 1959. 5. Woddell, L. S.: Egyptian civilization: Its origin and real chronology and Sumerian origin of Egyptian hieroglyphics. London: Luzak & Co. 1930. 6. Parlato, S. J.: The sandfly (Caddis fly) as an exciting cause of allergic coryza and asthma: II. Its relative frequency. J. Allergy **1**:307, 1930. 7. Ozere, R. L.: Demethylchlortetracycline photosensitivity. Canad. M. A. J. **85**:1199, 1961. 8. Horton, B. T., Braun, G. E., and Roth, G. M.: Hypersensitiveness to colds, JAMA **107**:1263, 1936.

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of Harold S. Pratt, M.D. It was voted to send a copy to his widow and to enscribe a copy on the Association's records.

Mr. Thomas Kane, Drs. Henry C. Thacher, Najib Pandya and Bournakel served on the panel for discussion of mental health plans. Mr. Kane traced the development of the mental health plan pointing out it was unique in that it was developed outside the hospital then moved to the hospital, rather than developing in the hospital then moving out into the community. Dr. Pandya discussed the types of treatment to be instituted, some of course depending on future staffing funds. Dr. Thacher discussed the services to be provided by the hospitals, again some projected to the future, and outlined the 24-hour emergency care and services. Dr. Bournakel outlined the area concept as provided in the State Survey.

DONALD L. ANDERSON, M.D., *Secretary*

KENNEBEC

A combined meeting of the Kennebec County Medical Association and the Maine Thoracic Society was held at the Fenway-Maine Motel in Waterville, Maine on March 16, 1967.

Dr. Louis Weinstein, the guest speaker, was introduced by the President, Robert L. Ohler, M.D. Dr. Weinstein discussed the problem of "Endocarditis" – the pathogenesis, symptomatology, diagnosis and treatment. He enumerated the numerous differences between subacute bacterial endocarditis and acute bacterial endocarditis.

A short business meeting was held following this. Kevin Hill, M.D. reminded the Association of pending legislation which would legalize the treatment by chiropractors of employees under the Workmen's Compensation Law. He urged the members to contact their representatives regarding this.

Alta Ashley, M.D. briefly mentioned the problem of syphilis control.

LUCIEN F. VEILLEUX, M.D., *Secretary*

AROOSTOOK

Aroostook County Medical Society officers for 1967:
President, Samuel Rideout, M.D., Fort Fairfield
Vice-President, George F. Higgins, M.D., Presque Isle
Secretary, George J. Harrison, M.D., Houlton
Treasurer, Clyde I. Swett, M.D., Island Falls
Delegates to the Maine Medical Association House of Delegates: Drs. John B. Madigan, Houlton, Melvin R. Aungst, Fort Kent and H. Douglas Collins, Caribou. Alternates: Drs. George F. Higgins, Rodrigue J. Albert, Fort Kent and Frederick J. Gregory, Caribou

GEORGE J. HARRISON, M.D., *Secretary*

New Members

ANDROSCOGGIN

Wallace E. Viles, M.D., Turner 04282

CUMBERLAND

ean J. Bousquet, M.D., Maine Medical Ctr., Portland 04102
Abram I. Cohen, M.D., Smith St., Harrison 04040

YORK

hilip G. Whitney, M.D., 10 Amherst St., Biddeford 04005

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Secretary, Karl V. Larson, M.D., East Machias

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News, Notes and Announcements

New England Obstetrical and Gynecological Society Spring Meeting Wednesday, May 3, 1967 Sheraton Eastland Motor Hotel Portland, Maine

Morning Program

9:00 A.M. Registration

10:00 A.M.-12:30 P.M. State of Maine Ballroom

Gynecologic Radiotherapy
ROBERT A. BEAROR, M.D., Senior Radiologist, Maine Medical Center

Incidence Trends in Cancer of the Uterus
JOSEPH E. PORTER, M.D., Chief Pathologist, Maine Medical Center

JOSEPH F. STOCKS, M.D., Resident in Pathology, Maine Medical Center

Thyroid Disease in Pregnancy
STANLEY E. HERRICK, JR., M.D., Director, Division of Medical Radioisotopes, Maine Medical Center

12:30 P.M. Luncheon: Hawaiian Hut

12:30 P.M. Luncheon and Council Meeting: Sebago Room

Afternoon Program

2:00-4:30 P.M. State of Maine Ballroom

Monitoring the Fetal Heart During Labor
EDWARD J. QUILLIGAN, M.D., Professor and Chairman of Department of Obstetrics and Gynecology, Yale University School of Medicine

Resuscitation in the Delivery Room
HOWARD P. SAWYER, JR., M.D., Senior Anesthesiologist, Maine Medical Center

Panel on Pelvic Congestion Syndrome
EUGENE C. MCCANN, M.D., Moderator, Chief Obstetrician and Gynecologist, Maine Medical Center

ROBERT M. MORRISON, M.D., Junior Obstetrician and Gynecologist, Maine Medical Center

BUELL A. MILLER, M.D., Associate Medical Staff, Maine Medical Center

4:45 P.M. General Meeting of the Society

5:30 P.M. Social Hour: Castine Room

6:30 P.M. Dinner: State of Maine Ballroom
Miss Patty Delaney, Soloist

Entertainment: Downeast Humor
Mr. Steve Merrill

Non-members as well as members of the New England Obstetrical and Gynecological Society are invited to attend.

Department of Health and Welfare Division of Maternal and Child Health Including Services for Crippled Children

(By Appointment Only)

Orthopedic Clinics

Augusta – Augusta General Hospital
1:00 p.m.: Apr. 27
Bangor – St. Joseph Hospital
9:00 a.m. and 1:00 p.m.: May 25
Half-day sessions: Apr. 27, June 22
Fort Fairfield – Community General Hospital
9:00 a.m. and 12:30 p.m.: May 8
Fort Kent – Peoples Benevolent Hospital
10:00 a.m.: May 9
Lewiston – Central Maine General Hospital
9:00 a.m.: Apr. 21, May 19, June 16
Machias – Down East Community Hospital
9:00 a.m.: Apr. 28
Portland – Maine Medical Center
9:00 a.m.: May 8, June 12
Presque Isle – Arthur R. Gould Memorial Hospital
9:00 a.m. and 12:30 p.m.: May 10
Rockland – Knox County Hospital
1:30 p.m.: May 18
Rumford – Community Hospital
1:30 p.m.: June 21
Waterville – Thayer Hospital
1:30 p.m.: June 22

Cardiac Clinics

Bangor – Eastern Maine General Hospital
9:00 a.m.: Apr. 28, May 12, 26, June 9, 23
Portland – Maine Medical Center
9:00 a.m.: Every Friday (holidays excepted)

Cleft Palate Evaluation Clinic

Portland – Maine Medical Center
10:00 a.m.: May 9

Pediatric Clinics

Bangor – Eastern Maine General Hospital
1:30 p.m.: Apr. 28, May 26, June 23
Presque Isle – Arthur R. Gould Memorial Hospital
1:30 p.m.: May 24, June 21

Clinics for Mentally Retarded Preschool Children

Waterville – Thayer Hospital
9:00 a.m.: Apr. 26, May 3, 17, 31, June 7, 21
Lewiston – Central Maine General Hospital
9:00 a.m.: May 8, June 12
Lewiston – St. Mary's General Hospital
9:00 a.m.: Apr. 24, May 22, June 26

Cystic Fibrosis Clinics

Lewiston – Central Maine General Hospital
9:00 a.m.: May 5, June 2
Portland – Maine Medical Center
9:00 a.m.: Apr. 18, May 16, June 20

Convulsive Clinic

Fort Fairfield – Community General Hospital
1:30 p.m.: May 3

Nutrition and Your Health
Annual New England Health Conference
Southwick Auditorium, University of Vermont
Burlington, Vermont
May 17, 1967

9:00 A.M. Registration and Coffee Hour

Medical Problems Related to Nutrition
HOWARD J. FARMER, M.D., General Practitioner, St. Johnsbury, Vermont

Understanding Psychological Attitudes of Eating
DR. ROBERT B. LAWSON, University of Vermont, College of Arts and Sciences, Department of Psychology

Let's Eat Lunch
BLAIR WILLIAMS, University of Vermont, College of Agriculture and Home Economics; Chairman, Department of Home Economics

Lunch

1:15 P.M.

Food Becomes You
DR. NORMAN ALPERT, University of Vermont College of Medicine, Professor of Physiology and Biophysics

Promoting Good Nutrition
DR. MARY HILL, U.S. Department of Agriculture, Nutritionist

Nutrition — The Time Tunnel
DR. PHILLIP WHITE, American Medical Association; Secretary, Council on Nutrition
Summary and Question-Answer Period

State of Maine Board of Registration of Medicine
Secretary — George E. Sullivan, M.D.
Waterville, Maine

Physicians Licensed to Practice Medicine and Surgery in the State of Maine
November 8-10, 1966

Through Examination

Mehdi Adeli, M.D., 3254 South Union Ave., Chicago, Ill.
Klaus Anselm, M.D., 6 Autumn St., Boston, Mass.
Ernesto G. Ballesteros, M.D., 292 Hammond St., Bangor, Me.
Kshitish C. Das, M.D., Ypsilanti State Hosp., Ypsilanti, Mich.
Tomas A. Duran-Quevedo, M.D., 42 Main St., Livermore Falls, Me.
Thomas A. Farrell, M.D., Hillside Rd., Brunswick, Me.
William J. Finlayson, M.D., 171 Harrison Ave., Boston, Mass.
Francisco S. Floro, M.D., 1927 Reid Ave., Lorain, Ohio
Ismet Hallac, M.D., 94 Sudbury Lane, Williamsville, N.Y.
Anthony B. Hill, M.D., Memorial Hosp., Worcester, Mass.
Akram M. Hilmi, M.D., 34-34 77th St., Jackson Heights, N.Y.
Julio Joison, M.D., The Mount Sinai Hosp., New York, N.Y.
Yani Karkalas, M.D., Box 5, Howard, R.I.
Muhlis Y. Kaya, M.D., Cleveland Metropolitan Gen. Hos., Cleveland, Ohio
Lucy G. Matriano, M.D., 350 Lenox Rd., Brooklyn, N.Y.
Javier Quintero-Chica, M.D., 164-10 84th Ave., Jamaica, N.Y.
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Randall H. Silver, M.D., Maine Coast Mem. Hosp., Ellsworth, Me.
James H. Thaidigsman, M.D., Temple Univ. Hosp., Philadelphia, Pa.

DEPARTMENT OF HEALTH AND WELFARE

Continued from Page 86

ward insuring food safety by thorough cooking and prompt, low temperature refrigeration of all foods potentially contaminated with Salmonellae. Protection of foods from contamination by human carriers is best accomplished by continuous education in good food handling technics and strict supervision of food handlers. It should be mandatory for food handlers to consult a physician if symptoms of gastroenteritis develop. The yield of carriers from this requirement would be greater and much more meaningful than the food handler stool examination used as part of a preemployment examination. An exception to this condemnation of routine stool examination would be to recommend it for hospital, convalescent and nursing home personnel. The hypersusceptibility of patients in these institutions necessitates the use of every possible device to insure a salmonella-free environment, including the personnel.

To recapitulate, salmonellosis is a present and increasing threat to health and productivity. The bacteria are widespread but may be prevented from causing illness by safe food handling practices and by reducing the sources of the organisms. Accurate diagnosis depends upon adequate culturing service in the laboratory. Antimicrobial drug therapy should be used only when the illness persists or complications are observed. Prompt and complete reporting of all cases will make it possible for health authorities to assess the problem locally and to initiate efforts toward tracing the source of the organisms.

People keep asking us:

"Why do you call the

FILTER QUEEN

a sanitation system

instead of a vacuum cleaner?"



FOR THE BIG DIFFERENCE
SEE THE NEXT TWO PAGES

Only FILTER

(The problem of overcoming increasing air pollution is one of the most urgent facing your institution and the entire communi today. How FILTER QUEEN, through its unique, patented Filter Cone helps combat air pollution while it cleans, should l of vital interest to every member of your hospital staff. We hope you will mark these pages and route them accordingl



1. Every hospital has its dust and odor problems.

Dramatic smoke test shows how FILTER QUEEN removes air-borne contaminants and offensive odors



2. That's when a FILTER QUEEN is needed.



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The FILTER QUEEN sanitary filter cone is a scientifically-designed dust separator, composed of a special long-fibred mat of pure cellulose, chemically treated to give it the necessary strength and air-filtering characteristics.

The engineers who perfected the FILTER QUEEN machine clearly recognized that all bag-type vacuum cleaners cannot operate with maximum efficiency because they use a porous bag. So, to make suction cleaning action truly efficient, they had to find a way to overcome the leakage in dust and dirt that so often occurs whenever a porous bag is used.

The highly successful result was an entirely *different* air flow principle, known today as Cyclonic Cleaning Action. By using Cyclonic Cleaning Action, FILTER QUEEN'S designers succeeded in not only collecting the dust and dirt normally collected by vacuuming; they also succeeded in trapping almost invisible airborne contaminants that formerly escaped back to repollute the air.

The difference between FILTER QUEEN'S remarkable Cyclonic Cleaning Action and ordinary vacuuming becomes immediately apparent when the Smoke Test pictured at left is made. Smoke, other contaminants and offensive odors virtually disappear. The room not only smells clean—it *is* clean!

The key to this almost magic action is FILTER QUEEN'S patented Sanitary Filter Cone. (See illustration.) Inrushing air, laden with dirt and dust, is deflected by a patented inlet guide as it enters the FILTER QUEEN container, then is whirled away by centrifugal force. Foreign matter heavier than air is forced to the bottom and the sides.

Clean air is filtered through our exclusive Sanitary Filter Cone *above* floor level, leaving smoke as well as dirt and dust trapped in the container. That is why hundreds of hospitals and other institutions insist on the FILTER QUEEN Sanitation System over any type of vacuum cleaner.

Ask your local FILTER QUEEN Distributor to make FILTER QUEEN'S dramatic Smoke Test in your hospital. Then you will *KNOW* why we proudly call it a FILTER QUEEN Sanitation System instead of a "vacuum cleaner."

DOCUMENTARY PROOF: *We would like to send you, with our compliments, an article entitled "Air Hygiene for Hospitals" which appeared in the Journal of the American Medical Association. In this article it is explained what happened to airborne contaminants when a FILTER QUEEN was used in a series of rigidly controlled tests conducted at the Harvard Medical School. Write to Health-Mor, Inc., 203 North Wabash Ave., Chicago, Illinois 60601*

FILTER QUEEN is a product of HEALTH-MOR, INC.,
203 North Wabash Ave., Chicago, Ill. 60601.
In Canada: Filter Queen Corp. Ltd.,
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You'll find FILTER QUEEN Sanitation Systems listed in your Yellow Pages under "Vacuum Cleaners". (That's because FILTER QUEEN is fast replacing ordinary vacuum cleaners.)



FILTER QUEEN

The cleaning method that does so much more it has to be called a Sanitation System.

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Mike expects a penicillin injection. He's about to be pleasantly surprised.

His physician is going to prescribe an oral penicillin —Pen•Vee® K (potassium phenoxymethyl penicillin). It's usually so rapidly and completely absorbed that therapeutic serum levels are produced in 15 to 30 minutes. Higher serum levels generally last longer than with oral penicillin G.

Indications: Infections due to pathogens susceptible to oral penicillin G. Prophylaxis of rheumatic fever in patients with previous history of the disease.

Precautions: Skin rash, symptoms resembling those of serum sickness, or other manifestations of penicillin allergy may occur. Measures for treating anaphylaxis should be readily available: epinephrine, oxygen and pressor drugs for relief of immediate allergic reactions; antihistamines and corticosteroids for delayed effects. Penicillin may delay or prevent the appearance of primary syphilitic lesions. Patients with gonorrhea who are suspected of concurrent syphilitic infections should be tested serologically for at least 3 months. Where lesions of primary syphilis are suspected, dark-field examination should precede use of penicillin. As with other antibiotics overgrowth of nonsusceptible organisms may occur; if so, discontinue and take appropriate measures. Treat β-hemolytic streptococcal infections with full therapeutic dosage for at least 10 days to prevent development of rheumatic fever or glomerulonephritis.

Contraindications: Infections caused by nonsusceptible organisms; history of penicillin sensitivity.

Composition: Tablets—125 mg. (200,000 units) and 250 mg., (400,000 units); Liquid—125 mg. (200,000 units) and 250 mg. (400,000 units) per 5 cc.

Wyeth Laboratories Philadelphia, Pa.

ORAL **Pen·Vee® K**
(potassium phenoxymethyl penicillin) Wyeth®



when he just can't sleep

Tuinal

Sodium Amobarbital and Sodium Secobarbital

(One-Half Sodium Amobarbital and One-Half Sodium Secobarbital)



Tinal helps wakeful patients fall asleep fast, stay asleep all night.

Indications: Tuinal, comprised of equal parts of Seconal® Sodium (sodium secobarbital, Lilly) and Amytal® Sodium (sodium amobarbital, Lilly), is indicated for prompt and moderately long-acting hypnosis.

Contraindications: Barbiturates should not be administered to anyone with a history of porphyria, nor should they be given in the presence of uncontrolled pain, because excitement may result.

Warning: May be habit-forming.

Precautions: Tuinal should be used cautiously in patients with decreased liver function, since prolongation of effect may occur.

Adverse Reactions: Idiosyncrasy, such as excitement, hangover, or pain, may appear. Hypersensitivity reactions occur in some patients, especially in those with asthma, urticaria, or angioneurotic edema.



Dosage: 1½ to 3 grains at bedtime.

Supplied: ¾, 1½, and 3-grain Pulvules®.

Additional information available to physicians upon request.
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There are 10,300* undetected diabetics in Maine

Most of these are probably among patients over 40; the overweight; relatives of diabetics, and mothers of large babies. By the time polyphagia, polyuria, polydipsia, pruritus or other overt symptoms of diabetes appear, damage may have been done that could have been minimized. DEXTROSTIX® gives you a reliable blood-glucose estimate in 60 seconds.

Why Wait?



*Based on Statistical Report, U.S. Dept. Commerce, ed. 86, and Fisher, G. F., and Vavra, H. M.: Pub. Health Rep. 80:961 (Nov.) 1965.

Note: DEXTROSTIX is not meant to replace the more precise analytical laboratory procedures such as needed in glucose tolerance testing.

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Picture of low back pain

treated with Parafon Forte® TABLETS

Paraflex® (chlorzoxazone)* 250 mg.
Tylenol® (acetaminophen) 300 mg.

afon Forte helps to relieve pain, ore mobility . . . stop pain-spasm feedback

ee is why. PARAFON FORTE provides:

nsalicylate analgesic equal to aspirin for the relief ain,[1,2] yet unlikely to produce the irritation to the sric mucosa so often associated with salicylate eapy[3]

a skeletal muscle relaxant shown to have up to a ur span of action,[4-6] and to retain effectiveness on continued administration,[5-7] but which does not the central effects of tranquilizing compounds.

cribe PARAFON FORTE for lasting spasmolysis analgesia in sprains, strains, myalgias, low back bursitis and other musculoskeletal disorders. patients will appreciate the restored comfort asting freedom of movement it usually provides.

Cautions and side effects: Use with caution in patients with known drug sensitivity. If a hypersensitivity reaction or symptoms suggestive of liver dysfunction are observed, the drug should be stopped. Occasionally, drowsiness, dizziness, lightheadedness, malaise, overstimulation or gastrointestinal disturbances may be noted; rarely gastrointestinal bleeding, allergic skin rashes, petechiae, ecchymoses, angioneurotic edema or anaphylactic reactions may have been drug associated. While *Paraflex* (chlorzoxazone) has been suspected as being the cause of hepatic toxicity in approximately eighteen patients, it was not possible to state that the dysfunction was or was not drug induced. ***Dosage:*** Two tablets q.i.d. ***Supplied:*** Scored, light green tablets, imprinted "McNEIL"—bottles of 100.

References: 1. Batterman, R. C., and Grossman, A. J.: Fed. Proc. *14*:316, 1955. 2. Goodman, L. S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 3, New York, The Macmillan Company, 1965, p. 331. 3. Roth, J. L. A., *et al.*: Gastroenterology *44*:146, 1963. 4. Conney, A. H., and Burns, J. J.: J. Pharmacol. Exp. Ther. *128*:340, 1960. 5. Settel, E.: Clin. Med. *6*:1373, 1959. 6. Berman, H. H., *et al.*: Dis. Nerv. Syst. *25*:430, 1964. 7. Darienzo, C.: Ibid., *27*:189, 1966.

McNEIL

*U. S. PATENT NO. 2,895,877
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"George wants to know if it's okay to take his cold medicine now, Doctor, instead of seven o'clock?"



The long-continued action of Novahistine LP should help you both get a good night's sleep. Two tablets in the morning and two in the evening will usually provide round-the-clock relief by helping clear congested air passages for freer breathing. Novahistine LP also helps restore normal mucus secretion and ciliary activity—normal physiologic defenses against infection of the respiratory tract. Use cautiously in individuals with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution ambulatory patients that drowsiness may result. Each Novahistine LP tablet contains: phenylephrine hydrochloride, 25 mg., and chlorpheniramine maleate, 4 mg.

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When the problem is only skin deep

USE 'POLYSPORIN'® brand POLYMYXIN B-BACITRACIN OINTMENT

for topical antibiotic therapy with minimum risk of sensitization

Caution: As with other antibiotic products, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

Supplied in ½ oz. and 1 oz. tubes.

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Antivert® Tablets/Syrup stops vertigo
(meclizine HCl, niacin)

Tablets: (meclizine HCl 12.5 mg. and niacin 50 mg.) Syrup: (each 5 cc. teaspoonful contains meclizine HCl 6.25 mg. and niacin 25 mg.)

Most widely prescribed anti-vertigo agent[1] Complete to moderate relief of symptoms in 9 out of 10 patients[2]

Antivert, the leading anti-vertigo product,[1] combines meclizine HCl, an outstanding drug for treatment of vestibular dysfunction, with niacin, a drug of choice for prompt vasodilation. Prescribe Antivert for your patients with vertigo, Meniere's syndrome and allied disorders.

Precautions and contraindications: Frequent, short-lived reactions include: cutaneous flushing, sensations of warmth, tingling and itching, burning of skin, increased gastrointestinal motility, and sebaceous gland activity. In explaining these reactions to the patient, it is suggested that they be regarded as a desirable physiological sign that the niacin is carrying out its intended function of vasodilation. Because of this vasodilation, severe hypotension and hemorrhage are obvious contraindications to Antivert therapy. Although the incidence of drowsiness and other atropine-like side effects such as dry mouth and blurring of vision is low, the physician should alert the patient to the need for due precautions when engaging in activities where alertness is mandatory. **Use in women of childbearing age:** A review of available animal data reveals that meclizine exerts a teratogenic response in the rat. In one study a dose of 50 mg./kg./day (50 times the maximum recommended human dose) produced cleft palate in 2 of 87 fetuses when administered to the rat at critical times during the first 15 days of gestation. At doses of 125 mg./kg./day, meclizine will produce 100% incidence of cleft palate in the rat. At doses of 25 mg./kg./day, decreased calcification of the vertebrae and relative shortening of the limbs were also produced in the rat, but experts disagree as to whether this is a teratogenic response. While available clinical data are inconclusive, scientific experts are of the opinion that this drug may possess a potential for adverse effects on the human fetus. Consequently, consideration should be given to initial use of a nonphenothiazine agent that is not suspected of having a teratogenic potential. In any case, the dosage and duration of treatment should be kept to a minimum. **Dosage:** One tablet or one to two teaspoonfuls (5-10 cc.) t.i.d. just before meals. Specific requirements for individual patients should be determined by the physician. **Supplied:** Tablets in bottles of 100 and 500. Syrup in pint bottles. RX only.

References: 1. Based on 1966 data from independent physicians' market survey organization. 2. Scal, J. C.: Eye Ear Nose & Throat Month. **38**:738 (Sept.) 1959.

Neobon®
geriatric ♀ supplement

helps keep them 'on the go'

Each capsule contains:

(1) Vitamins and Minerals	
Vitamin A (acetate)	2000 U.S.P. units
Vitamin D (ergocalciferol, U.S.P.)	200 U.S.P. units
Vitamin B_1 (thiamine mononitrate, U.S.P.)	0.5 mg.
Vitamin B_2 (riboflavin, U.S.P.)	0.5 mg.
Vitamin B_6 (pyridoxine HCl, U.S.P.)	0.5 mg.
Niacinamide, U.S.P.	50 mg.
Calcium pantothenate, U.S.P.	5 mg.
Vitamin E (di-alpha tocopheryl acetate)	5 I.U.
Rutin	5 mg.
Cobalt (from cobalt sulfate)	0.033 mg.
Molybdenum (from sodium molybdate)	0.066 mg.
Copper (from copper sulfate)	0.33 mg.
Manganese (from manganese sulfate)	0.33 mg.
Magnesium (from magnesium sulfate)	2 mg.
Iodine (from potassium iodide)	0.05 mg.
Potassium (from potassium sulfate)	1.66 mg
Zinc (from zinc sulfate)	0.4 mg.
(2) Hematopoietic Factors	
Iron (from ferrous sulfate)	3.40 mg.
Vitamin B_{12} (cobalamin concentrate, N.F., as Stablets®)	1 mcg.
Vitamin C (ascorbic acid, U.S.P.)	50 mg.
(3) Digestive Enzyme	
Pancreatic substance*	50 mg.
(4) Gonadal Hormones	
Methyltestosterone, N.F.	1.0 mg.
Ethinyl Estradiol, U.S.P.	0.006 mg.
(5) Amino Acids	
L-lysine (monohydrochloride)	50 mg.
L-Glutamic acid	30 mg.

*Enzymatically active defatted material obtained from 250 mg. of whole fresh pancreas.

For older adults who require it, daily supplementation with Neobon can help overcome decreases in endogenous gonadal hormone production, as well as deficiencies of iron, vitamins and other nutritional factors. In a single convenient capsule, Neobon provides vitamins, minerals, gonadal hormones, hematopoietic factors, digestive enzymes, and amino acids—all selected for adjunctive therapeutic value in the geriatric syndrome. For example, one of the gonadal hormones in Neobon is ethinyl estradiol. It is more slowly metabolized in the body than natural estrogens or their esters.

Precautions: Contraindicated in patients in whom estrogen or androgen therapy should not be used, as in carcinoma of the breast or prostate.

Dosage: One capsule, t.i.d. with meals, or as directed by physician.

Supplied: Bottles of 60 capsules. Rx only.

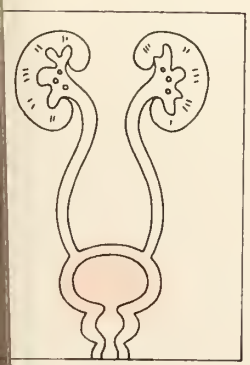
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The battle with bacteria: cystitis

Artist's conception of cystoscopic view of bladder showing congested blood vessels and edema around ureteral orifice.



consider Gantanol (sulfamethoxazole)



For vigorous treatment of G.U. infections before the invaders become entrenched... Gantanol (sulfamethoxazole) offers a comprehensive spectrum of antibacterial effectiveness against most common gram-negative as well as gram-positive invaders. In addition, it provides satisfactory concentrations in blood and urine with ready diffusion into interial fluids for antibacterial activity at foci of bacterial asion.

h antibacterial activity against *E. coli* and other com- urinary pathogens... A review of 153 cases of acute . infections reported in the literature shows that 90% responded to Gantanol (sulfamethoxazole), with over one-half of these patients showing excellent relief of symptoms.[1,2] Even in stubborn chronic G.U. infections, almost 60% of 450 patients improved on Gantanol (sulfamethoxazole), including many who had not responded to other antibacterials.[1-6]

Generally uncomplicated therapy enhances the favorable clinical results... Of the total 686 patients from the studies cited,[1-6] only three discontinued therapy because of side effects. Most of the side effects reported (approximately 3%) were mild and included nausea and/or vomiting, skin rash, dizziness, headache, gastritis, generalized uneasiness and itching.[1-6]

1. Peters, J. H.: *J. Urol.*, 87:747, 1962. 2. Draper, J. W., *et al.*: *South. M. J.*, 57:920, 1964. 3. Stewart, B. L.: *J. Urol.*, 87:491, 1962. 4. Hagstrom, R. S.: *Rocky Mountain M. J.*, 59:(2), 37, 1962. 5. Arnold, J. H.: *Clin. Med.*, 71:552, 1964. 6. Nelson, C. G.: *Colorado GP*, 3:(3), 2, 1961.

ore prescribing, please consult complete product rmation, a summary of which follows:

otraindicated in sulfonamide-sensitive patients, gnant females at term, premature infants, or newn infants during first three months of life.

nings: Use only after critical appraisal in patients i liver damage, renal damage, urinary obstruction lood dyscrasias. If toxic or hypersensitivity reac- or blood dyscrasias occur, discontinue therapy. In mittent or prolonged therapy, blood counts and and kidney function tests should be performed.

autions: Observe usual sulfonamide therapy pre- ons, including maintenance of an adequate fluid e. Use with caution in patients with histories of gies and/or asthma. Patients with impaired renal tion should be followed closely since renal impair- may cause excessive drug accumulation. Occa- l failures may occur due to resistant microorgan- Not effective in virus or rickettsial infections.

rse Reactions: Headache, nausea, vomiting, urti- diarrhea, hepatitis, pancreatitis, blood dyscra- neuropathy, drug fever, skin rash, Stevens-Johnson syndrome, injection of the conjunctiva and sclera, petechiae, purpura, hematuria or crystalluria may occur, in which case the dosage should be decreased or the drug withdrawn.

Dosage: Adults—4 tablets initially, then 2 tablets b.i.d. or t.i.d. depending upon severity of infection. Children —1 tablet/20 lbs initially, followed by ½ tablet/20 lbs b.i.d.

How Supplied: Tablets, 0.5 Gm, bottles of 50.

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ROCHE

when there are bacterial invaders in the bladder, prostate or kidneys

Gantanol®
(sulfamethoxazole)

Everyone says she's a barrel of fun



But what does she think?



Many overweight patients can benefit from the appetite control provided by the sustained anorexigenic-tranquilizing action of BAMADEX SEQUELS: anorexigenic action of amphetamine; tranquilizing action of meprobamate; prolonged action through sustained release of active ingredients.

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DEXTRO-AMPHETAMINE SULFATE (15 mg.) WITH MEPROBAMATE (300 mg.) SUSTAINED RELEASE CAPSULES

to help establish a new dietary pattern

Contraindications: Dextra-amphetamine sulfate: in hyperexcitability and in agitated prepsychatic states. Previaus allergic or idiosyncratic reactians ta meprabamate.

Precautians: Use with caution in patients hypersensitive ta sympathamimetic campaunds, wha have caranary ar cardiavascular disease, ar are severely hypertensive.

Dextra-amphetamine sulfate: Excessive use by unstable individuals may result in psychalagical dependence.

Meprabamate: Careful supervisian af dase and amaunts prescribed is advised, especially far patients with knawn prapensity far taking excessive quantities af drugs. Excessive and pralanged use in susceptible persans, e.g. alcahalics, farmer addicts, and ather severe psychaneuratics, has been reparted ta result in dependence an the drug. Where excessive dosage has cantinued far weeks ar manths, reduce dasage gradually. Sudden withdrawal may precipitate recurrence af preexisting symptoms such as anxiety, anarexia, ar insamnia; ar withdrawal reactians such as vamiting, ataxia, tremors, muscle twitching and, rarely, epileptifarm seizures. Should meprabamate cause drawsiness ar visual disturbances, reduce dasage and avaid aperation af matar vehicles, machinery ar ather activity requiring alertness. Effects af excessive alcahal cansumptian may be increased by meprabamate. Apprapriate caution is recammended with patients prane ta excessive drinking. In patients prane ta both petit and grand mal epilepsy meprabamate may precipitate grand mal attacks. Prescribe cautiausly and in small quantities ta patients with suicidal tendencies.

Side Effects: Overstimulatian af the central nervaus system, jitteriness and insamnia ar drawsiness.

Dextra-amphetamine sulfate: Insamnia, excitability, and increased matar activity are camman and ardinarily mild side effects. Canfusian, anxiety, aggressiveness, increased libida, and hallucinatians have alsa been abserved, especially in mentally ill patients. Rebaund fatigue and depressian may fallaw central stimulatian. Other effects may include dry mauth, anarexia, nausea, vamiting, diarrhea, and increased cardiavascular reactivity.

Meprabamate: Drawsiness may accur and can be assaciated with ataxia; the symptam can usually be cantralled by decreasing the dase, ar by cancamitant administratian af central stimulants. Allergic ar idiasyncratic reactians: maculapapular rash, acute nanthrambacytapenic purpura with petechiae, ecchymases, peripheral edema and fever, transient leukapenia. A case af fatal bullaus dermatitis, fallawing administratian af meprabamate and prednisalane, has been reparted. Hypersensitivity has praduced fever, fainting spells, angianeuratic edema, branchial spasms, hypatensive crises (1 fatal case), anuria, stamatitis, practitis (1 case), anaphylaxis, agranulacytasis and thrambacytapenic purpura, and a fatal instance af aplastic anemia, but anly when other drugs knawn ta elicit these canditians were given cancamitantly. Fast EEG activity, usually after excessive dasage. Impairment af visual accammadatian. Massive averdasage may praduce drawsiness lethargy, stupar, ataxia, cama, shack, vasamatar and respiratary callapse.

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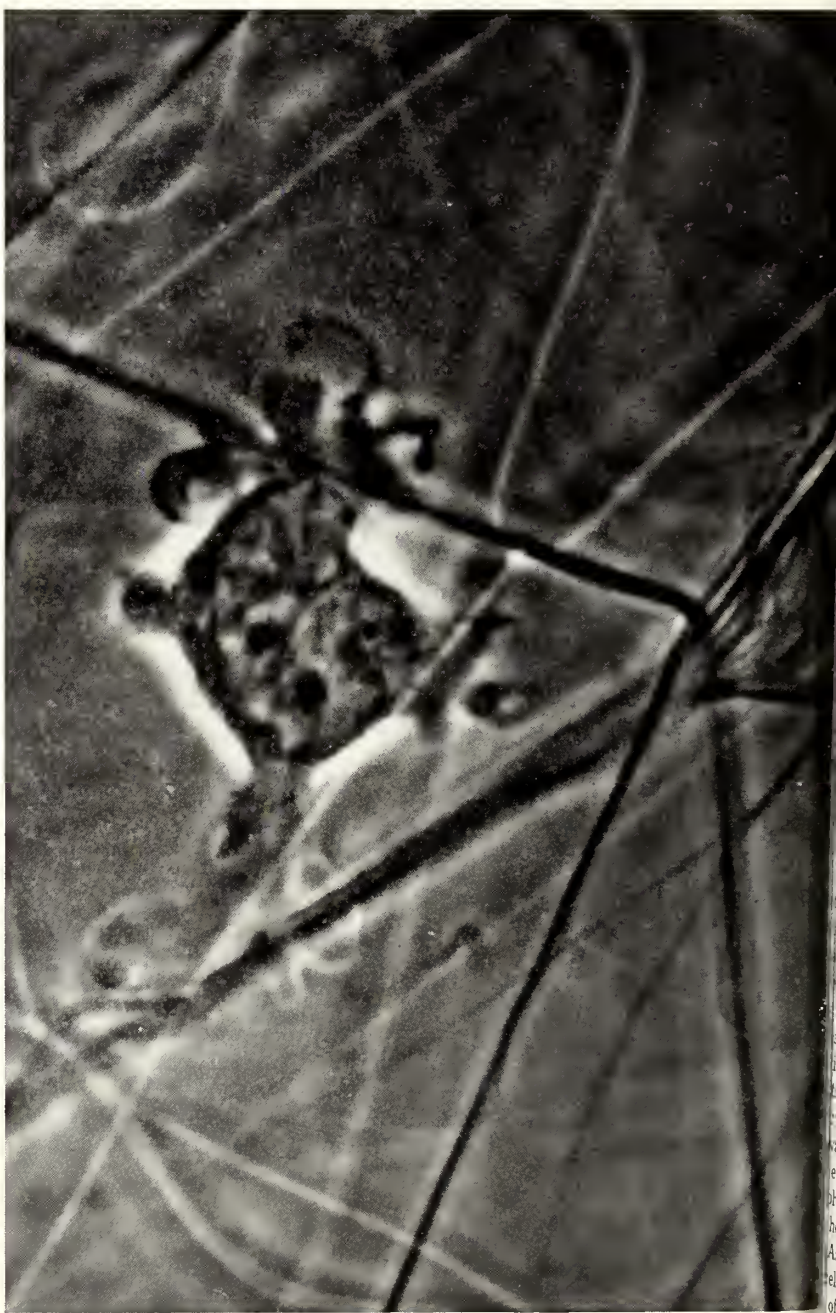
695-6

INFLAMMATION:
A cellular fight for life

A SYNTEX REPORT based on recently developed hypotheses about topical corticosteroids, including the cellular theories of inflammation by Thomas F. Dougherty, Ph.D., University of Utah.

You are looking at a fibroblast fighting for life. This cell—one of the most common found in connective tissue—has literally been poisoned by cytotoxins released from other cells that have ruptured. Soon, if the abnormal activity of this fibroblast does not cease, it, too, will rupture and die—one more casualty in the inflammatory wave of destruction precipitated by injury.

Until a short time ago no one had ever witnessed such a scene at the cellular level. Now, through advanced cinemicrographic techniques, it is possible to view and photograph the inflammatory process as produced experimentally in living animal tissue. This method permits new insight into the mechanism of inflammation and the role of corticosteroids in therapeutic management. Equally important, these techniques shed new light on factors that may make one corticosteroid more effective than another—factors that can be correlated with other chemical, biologic, and clinical parameters.

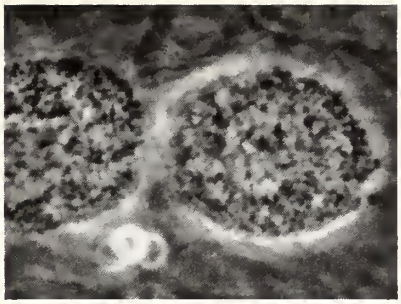


Visual evidence of how orticosteroids influence e inflammatory reaction

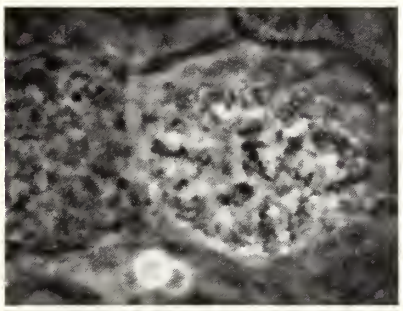
orking with phase-contrast cine-icrography on living animal tissue, octors Thomas F. Dougherty and avid Berliner of the University of ah College of Medicine have actu-y filmed cellular events that occur ring the inflammatory reaction. is remarkable study* and addi-nal work by these investigators, as ll as by others, have established a w theoretical biologic basis for the iinflammatory effect of the corti-teroids. (It must be noted that er theories, such as the lysosome so-called "suicide bag" theory, e been postulated, although it is e likely that there are more ilarities than differences among various theoretical models.)

he inflammatory wave of destruction

his investigation an injurious in-on of gelatin is used to set off an ammatory reaction in living se tissue. What follows is a wave estructive cellular activity that prises the inflammatory re-se to injury. Mast cells (which ain heparin, serotonin and hista-) take up water, swell and rup- releasing their contents, which oxic outside the mast cell wall. e toxins, in turn, cause disinte-on of other cells (such as fibro-s) and the release of additional material. Capillaries, too, take ater and leak unformed blood nts, causing edema. And poly-honuclears, lymphocytes and elial cells invade the inflamed as a result of all these changes, llular environment reaches a of turmoil.



Phase-contrast microscopy showing mast cell before injury.



Mast cell (after injury) has broken up and released cytotoxins.

How corticosteroids change the picture

Corticosteroids appear to virtually stop the abnormal cellular activity that constitutes the inflammatory reaction. This permits the body's natural resources to clear up the inflamed area and repair the damaged tissue. This interpretation is supported by the fact that when the injurious gelatin solution is injected simultaneously with a corticosteroid —Synalar (fluocinolone acetonide)— the inflammatory pattern simply does not develop.



Fibroblast in high state of activity, much distorted.



Mast cells showing effects of corticosteroid action: cells are normal in size, shape and activity.

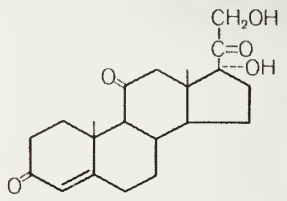


In summarizing his study Doctor Dougherty states: "...we also feel this work may explain why one corticosteroid helps a patient more rapidly and effectively than another. If it does, it is because one corticosteroid is the fastest, most effective inhibitor of the series of inflammatory events at the tissue level."

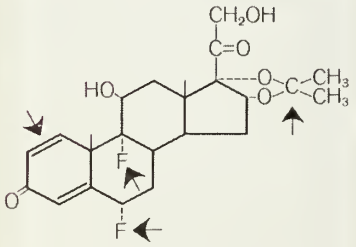
**A New View of Corticosteroid Action in Inflammatory Dermatoses,* a film based on this study, is now available from your Syntex representative.

How advances in chemical design have achieved greater steroid potency

The chemical modification of corticosteroid molecules from the advent of hydrocortisone to the development of Synalar (fluocinolone acetonide) is a prime example of how biochemists can "design" to increase therapeutic activity and minimize undesirable side actions. Below, for example, we see the important changes that were made in reference to the hydrocortisone molecule to produce fluocinolone acetonide, one of the most active of all topical corticosteroids. As a result, a 0.01% preparation of Synalar (fluocinolone acetonide) has been reported to do the work of a 1% hydrocortisone product containing 100 times more cortiscosteroid. And it can often do it more effectively.



Hydrocortisone

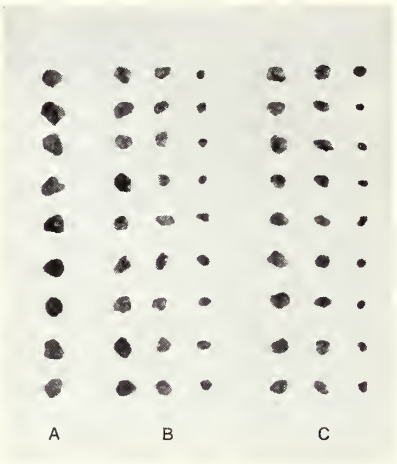


Fluocinolone Acetonide (Synalar)

- ☐ *a double bond between carbons 1 and 2*
- ☐ *fluorine substitutions at* both *the 6-α, and the 9-α positions*
- ☐ *the addition of the acetonide at the 16-α, 17-α positions, thus providing one of the most potent topical corticosteroids available.*

How bioassay tests are used to "predict" therapeutic potential

Biologic assays are another tool used by researchers to help establish the relative activity of corticosteroids. To date no single method of assaying corticosteroid activity has emerged as the ideal "yardstick" for predicting therapeutic potential. Taken together, however, these methods have proved useful. When such tests are run on various corticosteroids, a definite order of corticosteroid activity becomes evident. Compounds with the highest order of activity may be expected to merit clinical trial to establish their high therapeutic potential. When assayed by these methods, fluocinolone acetonide (Synalar) emerges as one of the most active topical corticosteroids, milligram for milligram, available for clinical application today.



THE THYMUS INVOLUTION ASSAY[1-4] is run on adrenalectomized rats. The sizes of the glands are measured, and the degree of involution caused by the steroid is determined as an indication of its potency. In the above photo, the comparative involution of thymus glands achieved with hydrocortisone and Synalar (fluocinolone acetonide) is shown. Untreated controls (A) show normal size. Group B – injected with 1, 2 and 4 mg. of hydrocortisone – show progressively smaller thymuses as does Group C – injected with fluocinolone acetonide – but with only 1/500th the dose of hydrocortisone.



THE ANTIGRANULOMA ASSAY[1-4] also utilizes adrenalectomized rats. Granulomas are induced by subcutaneous implantation of cotton pellets on either side of the thorax. The degree of granuloma inhibition achieved by a steroid reflects its potency. The above photo shows the inhibition of granuloma formation achieved with hydrocortisone and Synalar (fluocinolone acetonide). Untreated controls (A) show large, red granulomas adhering to the pellets. Group B, receiving hydrocortisone and Group C, receiving fluocinolone acetonide, show little, if any, granuloma formation. Fluocinolone acetonide produced the same effect as hydrocortisone with only 1/500th the dose. This assay, as well as the thymus involution assay, measures systemic rather than topical corticosteroid activity. Nevertheless, results by these methods correlate well with other assays and with the milligram potencies of topical steroids in current clinical use.

Worldwide clinical experience confirms the predictable therapeutic potential of Synalar

It is particularly gratifying that the promise of the advanced chemical design and high order of bioassay activity of Synalar (fluocinolone acetonide) has been confirmed by widespread therapeutic application. Indeed, the impressive clinical response rate of Synalar has been documented in no fewer than 232 papers from 22 countries.

Representative Clinical Results with Synalar*

Efficacy Documented in over 4,000 Patients

Condition	Number of Publications	Number of Patients	Significant Improvement†
Contact Dermatitis	27	750	713
Eczematous Dermatitis	21	472	409
Seborrheic Dermatitis	18	442	426
Atopic Dermatitis	24	460	426
Psoriasis	36	1,699	1,510
Neurodermatitis	18	351	324
Total	144	4,174	3,808

*Complete bibliography on request.

†Expressed by the authors as excellent, very good, good, complete remission of inflammation, etc.

PRESCRIBING INFORMATION

For initiation of therapy: Cream 0.025%, 5 and 15 Gm. tubes, 425 Gm. jars; *for emollient effect:* Ointment 0.025%, 15 Gm. tubes; *for maintenance therapy:* Cream 0.01%, 15 and 45 Gm. tubes, 120 Gm. jars; *for intertriginous or hairy sites:* Solution 0.01%, 20 cc. and 60 cc. plastic squeeze bottles; *for infected inflammatory dermatoses:* Neo-Synalar® Cream (0.025% fluocinolone acetonide, neomycin sulfate, equivalent to 0.35% neomycin base), 5 and 15 Gm. tubes.

CONTRAINDICATIONS: Tuberculous, fungal, and most viral lesions of the skin, (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of the components. PRECAUTIONS: Synalar preparations are virtually nonsensitizing and nonirritating. However, the solution may produce burning or stinging when applied to denuded or fissured areas. In some patients with dry lesions, the solution may increase dryness, scaling or itching. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. Prolonged use of any antibiotic may result in overgrowth of nonsusceptible organisms; if this occurs, appropriate therapy should be instituted. When severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. SIDE EFFECTS: Side effects are not ordinarily encountered with topically applied corticosteroids. As with all drugs, however, a few patients may react unfavorably to Synalar under certain conditions. The neomycin in Neo-Synalar Cream rarely produces allergic reactions.

REFERENCES: 1. Lerner, L. J., Bianchi, A., Turkheimer, A. R., Singer, F. M., and Borman, A.: Anti-inflammatory steroids: potency, duration and modification of activities. Ann NY Acad Sci 116:1071 (Aug. 27) 1964. 2. Idem: Comparison of anti-granuloma, thymolytic and glucocorticoid activities of anti-inflammatory steroids. Proc Soc Exp Biol Med 116:385 (June) 1964. 3. Ringler, A.: Activities of adrenocorticosteroids in experimental animals and man, in Dorfman, R. I.: Methods of hormone research, New York, Academic Press, 1964. vol. III. pp. 234-280. 4. Gubersky, V. R.: To be published.

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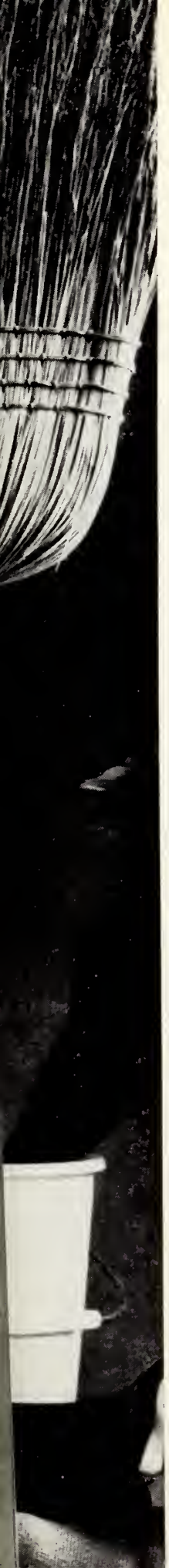
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Indicated in anxiety, tension, agitation, irritability, and anxiety associated with depression.

May be used in a broad range of patients, generally with considerable dosage flexibility.

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Precautions: Hypotensive reactions are rare, but use with caution where complications could ensue from a fall in blood pressure, especially in the elderly. One patient exhibiting drug dependency by taking a chronic overdose developed upon cessation questionable withdrawal symptoms. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose; excessive prolonged use in susceptible patients (alcoholics, ex-addicts, etc.) may result in dependence or habituation. Reduce dosage gradually after prolonged excessive dosage to avoid possible epileptiform seizures. Caution patients against driving or operating machinery until absence of drowsiness or dizziness is ascertained. Warn patients of possible reduction in alcohol tolerance. Safety for use in pregnancy has not been established.

Not indicated in children under 6 years; absolute dosage for 6 to 12 year-olds not established.

Side Effects: Therapy-interrupting side effects are rare. Transient mild drowsiness is common initially; if persistent, reduce dosage. Dizziness, vertigo and headache have also occurred infrequently; syncope, rarely. Mild paradoxical reactions (excitement, stimulation of affect) are reported in psychiatric patients. Minor diffuse rashes (morbilliform, urticarial and maculopapular) are rare. Nausea, lethargy, edema, slurred speech, tremor and altered libido are rare and generally controllable by dosage reduction. Although rare, leukopenia and hepatic dysfunction including jaundice have been reported during therapy. Periodic blood counts and liver function tests are advised. Ataxia, reported rarely, does not appear related to dose or age.

These side reactions, noted with related compounds, are not yet reported: paradoxical excitation with severe rage reactions, hallucinations, menstrual irregularities, change in EEG pattern, blood dyscrasias (including agranulocytosis), blurred vision, diplopia, incontinence, stupor, disorientation, fever, euphoria and dysmetria.

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Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should be closely supervised and should be warned to report immediately fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage. Make regular blood counts. Discontinue the drug and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The most common are nausea, edema and drug rash. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. Infrequently, agranulocytosis, or a generalized allergic reaction may occur and require withdrawal of medication. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported but cannot definitely be attributed to the drug. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

Dosage in Osteoarthritis: The initial daily dosage in adults is 300-600 mg. in divided daily doses. When improvement occurs, dosage should be decreased to the minimum effective level; this should not exceed 400 mg. daily, and is often achieved with only 100-200 mg. daily.

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Watts, T W , Jr. Treatment of Rheumatoid Disorders with Oxyphenbutazone, Clin. Med. 73:65, 1966. — 84.6% of 39 patients

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Valium

(diazepam

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Contraindications: Infants, patients with history of convulsive disorders or glaucoma.
Warning: Not of value in the treatment of psychotic patients, and should not be employed in lieu of appropriate treatment.
Precautions: Limit dosage to smallest effective amount in elderly patients (not more than 1 mg, one or two times daily) to preclude ataxia or oversedation. Advise patients against possibly hazardous procedures until correct maintenance dosage is established; driving during therapy not recommended. In general, concurrent use with other psychotropic agents is not recommended. Warn patients of possible combined effects with alcohol. Safe use in pregnancy not established. Observe usual precautions in impaired renal or hepatic function and in patients who may be suicidal; periodic blood counts and liver function tests advisable in long-term use. Cease therapy gradually.

Side Effects: Side effects (usually dose-related) are fatigue, drowsiness and ataxia. Also reported: mild nausea, dizziness, blurred vision, diplopia, headache, incontinence, slurred speech, tremor and skin rash; paradoxical reactions (excitement, depression, stimulation, sleep disturbances, hallucinations); changes in EEG patterns. Abrupt cessation after prolonged overdosage may produce withdrawal symptoms similar to those seen with barbiturates, meprobamate and chlordiazepoxide HCl.
Dosage—Adults: Mild to moderate psychoneurotic reactions, 2 to 5 mg b.i.d. or t.i.d.; severe psychoneurotic reactions, 5 to 10 mg t.i.d. or q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; muscle spasm with cerebral palsy or athetosis, 2 to 10 mg t.i.d. or q.i.d. Geriatric patients: 1 or 2 mg/day initially, increase gradually as needed.
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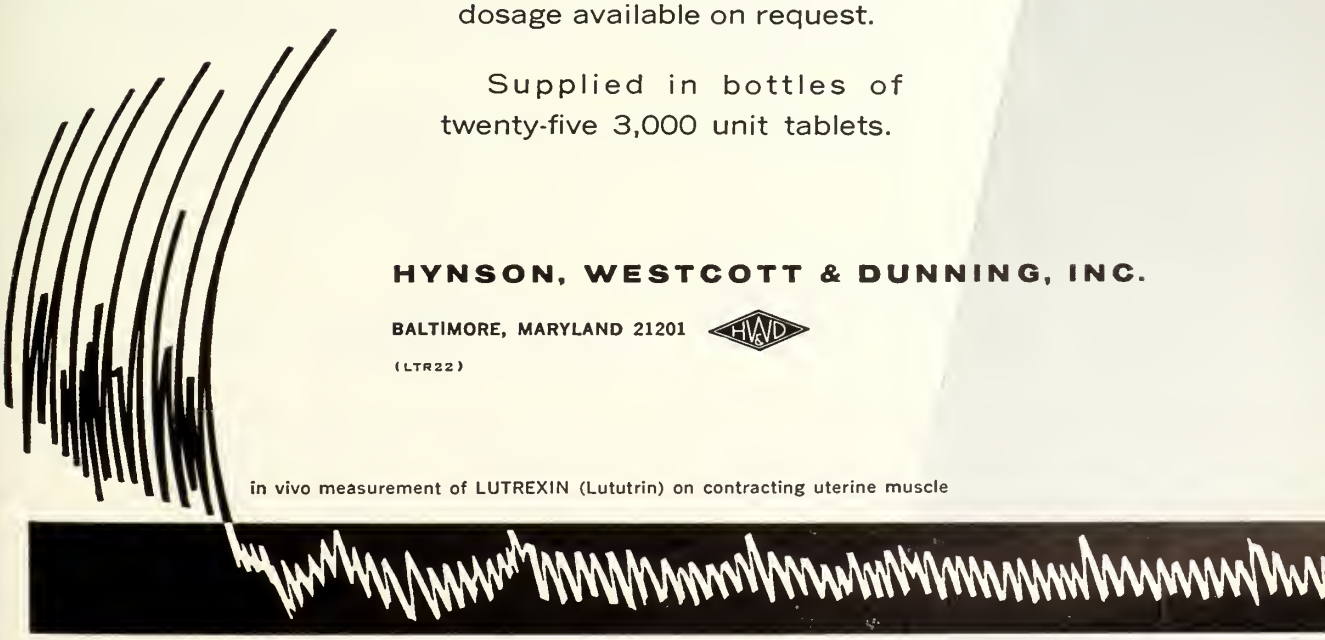
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in any case,
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Precautions: As with all new drugs, blood and liver function tests are advisable during prolonged treatment. **Pending further experience, like most chemotherapeutic agents, this drug should not be given in the first trimester of pregnancy. It must be used cautiously in patients with liver disease or severe impairment of kidney function.** Because photosensitivity reactions have occurred in a small number of cases, patients should be cautioned to avoid unnecessary exposure to direct sunlight while receiving NegGram, and if a reaction occurs, therapy should be discontinued. The dosage recommended for adults and children should not arbitrarily be doubled unless under the careful supervision of a physician. Bacterial resistance may develop.

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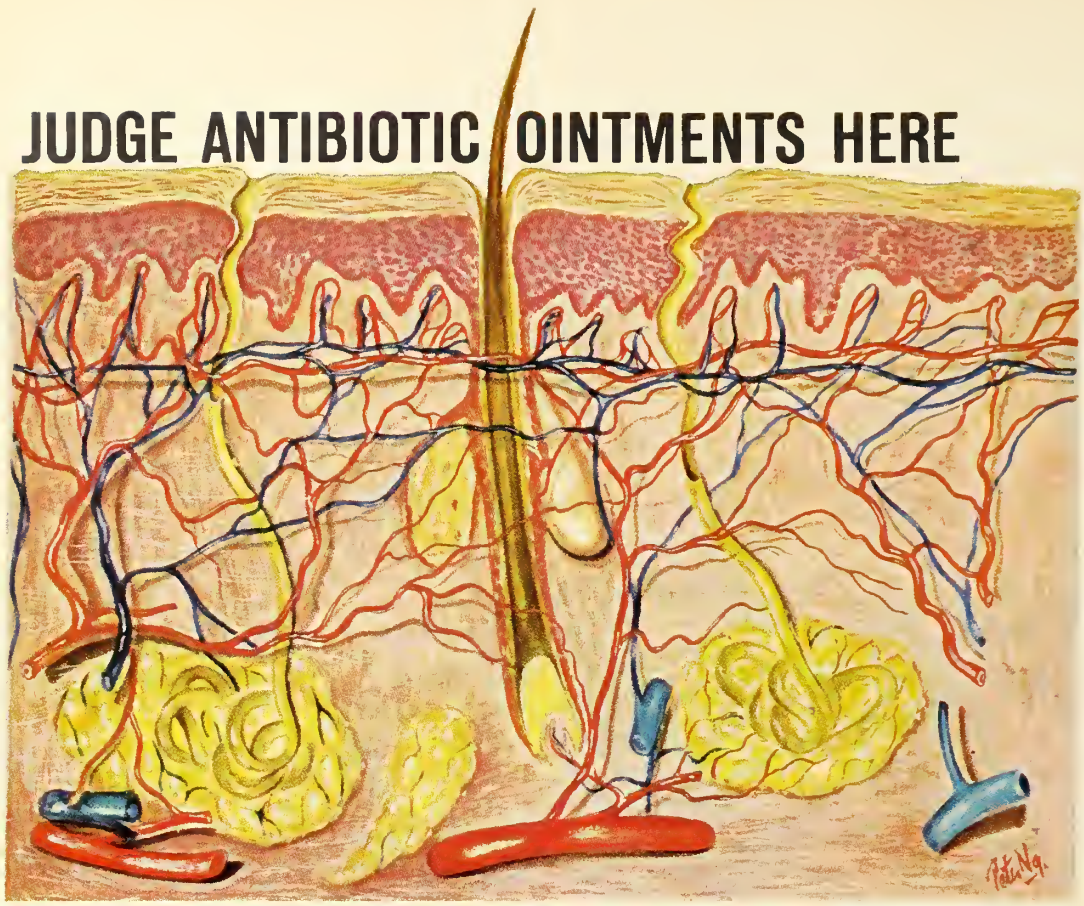
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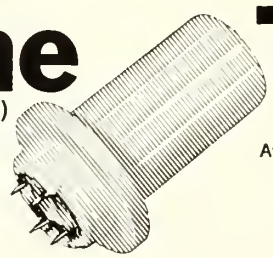
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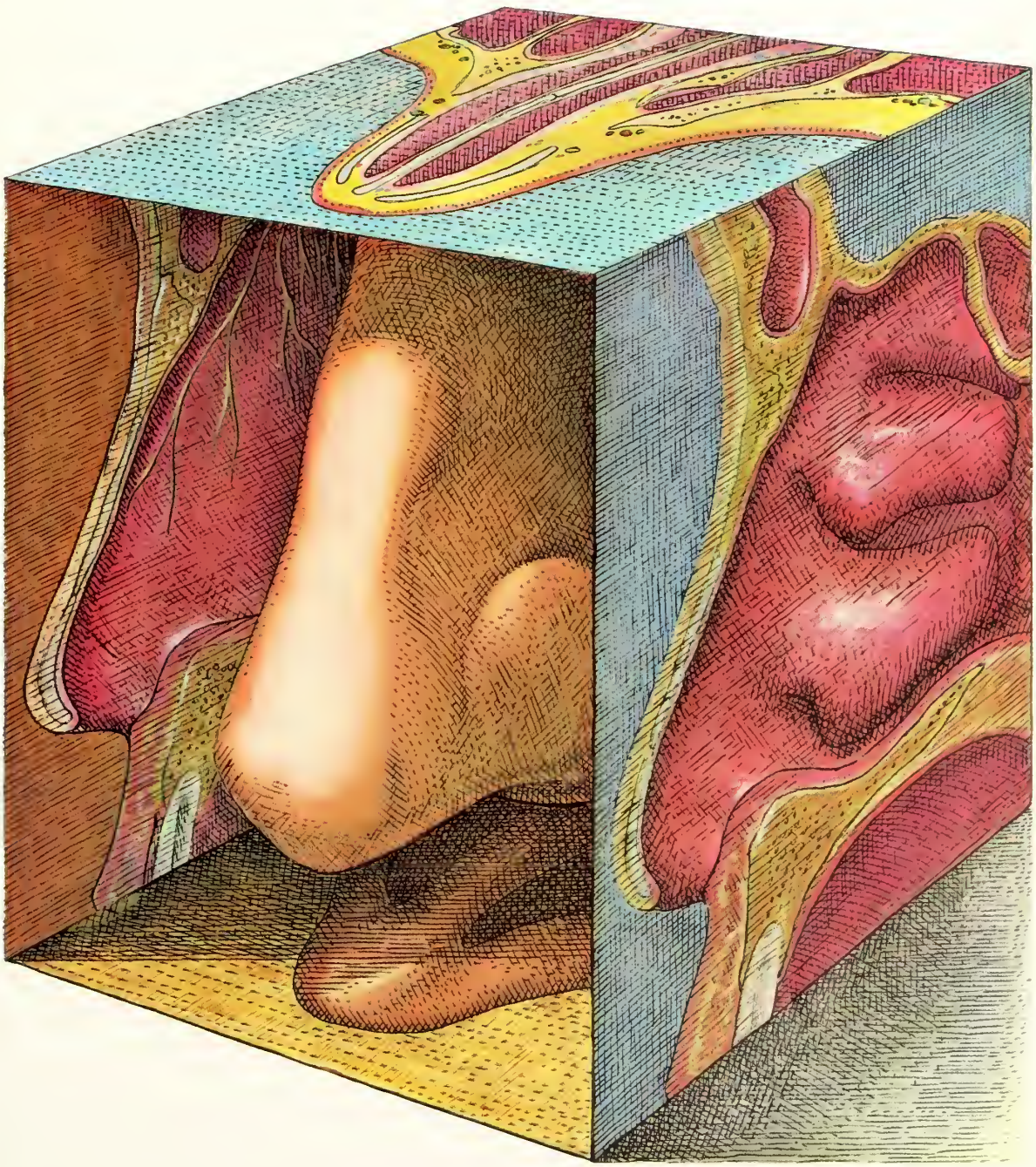
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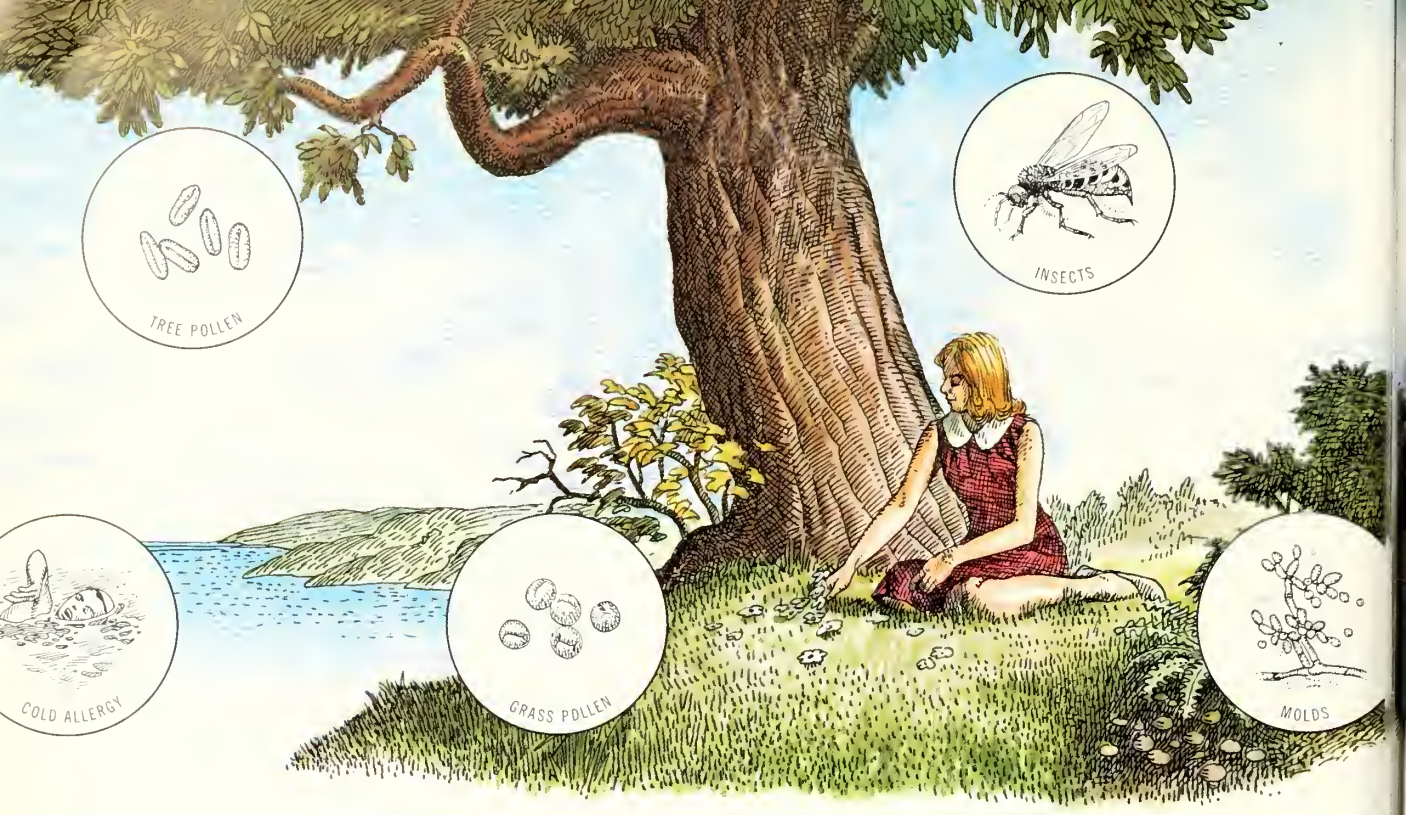
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this issue: the ubiquitous world of summer allergies



the ubiquitous world of summer allergies

Donald L. Unger, M.D. • Clinical Assistant Professor, Department of Medicine (Allergy), Stritch School of Medicine (Loyola).

In the Spring a young man's fancy lightly turns to thoughts of—allergies. This is at least true of the 10% of the population who have hay fever and the 4% who have asthma.[1] The snow melts, the trees blossom and the noses run. Patients who were fine all winter may not be enthralled by the sight of the first robin or the blossoming of a crocus, for their appearances may precede the "sneezin' season."

Allergies in general can be divided into winter allergies and summer allergies. In the winter the main problems are inside the house: e.g. dogs, cats, dust and feathers. Houses in the northern half of the country become so dry that it becomes essential to add humidity to the home; this is a far cry from the damp summer months with the moldy basements and need for dehumidifiers.

Early in April trees begin to pollinate, with each tree having about a two week period of pollination. A particular patient may be sensitive to only one tree and thus have his hay fever for such a short time that he thinks he has a cold.[2] The entire tree season starts about April 1 and ends about Memorial Day, although all hay fever seasons are blurred and prolonged in the southern part of the country. Tree pollen is usually very heavy and a person may well have most of his exposure from those trees immediately surrounding his home.

Grasses pollinate from about May 15 until July 4, and cause "rose fever." Grass pollens are somewhat lighter and more buoyant than tree pollens, and are much more ubiquitous. While there are several varieties of grasses in the United States, they are so closely related antigenically that a person sensitive to one is generally sensitive to them all.[3] Thus, while the tree season is really several small seasons intertwined, the grass season will usually result in symptoms for a more prolonged period. Obviously, a grass-sensitive patient will have trouble only when grass is pollinating—he will have to think of another excuse not to mow the lawn after July 4.

Ragweed is the "Big Daddy" of them all in the eastern two-thirds of the country. Pollination is generally from mid-August until the end of September, with the predicted lower counts and longer seasons



in the southern part of the country. Ragweed is a very light pollen which may be windborne for hundreds of miles. An interesting study was made in New York City, in which 90% or more of the ragweed plants were destroyed in three of the five boroughs; pollen counts done during the season were virtually identical in all five.[4]

Ragweed is, of course, the most common cause of hay fever and is associated with an incredible loss of man hours from work each year. Many is the patient who travels to areas where the pollen count is low, just to avoid having symptoms. There is no ragweed anywhere in the world except the United States and portions of Canada and Mexico.

While molds are present through the year, the most important ones predominate from April until November. An old wives' tale has ragweed ending with the first frost, when actually it ends a good month earlier. It is Alternaria—the kingpin of the molds—that meets a sudden demise with the first frost. Alternaria-sensitive patients are in their glory when there is snow on the ground, and might be ideally suited to man the radar stations in Alaska. In September and October, Alternaria counts are at their highest, perhaps associated with the burning of leaves. Other molds such as Hormodendrum and Helminthosporium are associated with the warmer weather, as opposed to Penicillium and Aspergillus which are household molds.

Summer also means the return of our much maligned associates—bugs. Insects cause allergic symptoms by two methods: the bite or sting of the Hymenoptera group, and the inhalation of particles of the bodies of various insects. Wasp stings are the oldest known form of allergy, as they caused the death of one of the pharaohs in ancient Egypt.[5] Bees, wasps and hornets account for many deaths in this country, and those sensitive to them should carry special treatment kits at all times; a few minutes delay in the administration of epinephrine to such a patient, might be the difference between life and death. Inhalation of particles of insects may cause sneezing and wheezing in a susceptible individual.[6] Both of these forms of insect allergy may be benefitted by hyposensitization.

The insect recognizes no professional bounds. He is as apt to bite the physician as the patient. So this season, beware of bugs. And beware, too, of poison ivy. That pleasant stroll through the woods and underbrush with the Boy Scouts might turn into a

(Concluded on following page)

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nightmare for the botanically uninitiated in the causes of rhus dermatitis (poison ivy, poison oak and poison sumac). Although you may have been careful, your dog may not have noted that it wasn't clover he jumped through, but poison ivy. His return to your side may give you the rhus dermatitis that you so carefully avoided. That heavenly campfire may be emitting particles of rhus oil to produce an airborne contact dermatitis of the exposed areas of the body.

Another fascinating, but rather infrequent type of summer allergy is physical allergy. Some people sneeze on exposure to sunlight, while others break out in rashes, usually on the exposed parts of the body. These rashes may well follow the administration of various photosensitizing drugs, e.g. demethylchlortetracycline.[7] Another form of physical allergy and one that may be lethal in the summer, is cold allergy. Yes, I mean cold allergy, not heat allergy. The cool dip on a hot day with its consequent sudden chilling of the body, may be the coup de grace for a cold sensitive patient.[8] It is customary to write "heart attack" on the death certificate, even though the victim may have been an 18-year-old boy who looks like a Greek god.

Lest the reader be depressed by this saga of afflictions associated with the warmer months, perhaps he should remember that it is also a time for swimming, baseball, lying in the sun and taking that long-planned vacation. So let's all join in a chorus of "In the Good Old Summertime," as we sneeze, wheeze and scratch. Be careful of your suntan lotion, however; it may cause you a contact dermatitis.

References 1. Unger, L.: Bronchial asthma. Charles C. Thomas Co. p. 47, 1946. 2. Samter, M.: Immunological diseases. Little, Brown and Co. p. 513, 1965. 3. Wodehouse, R. P.: Antigenic analysis by gel diffusions: 2. Grass pollen. Int. Arch. Allerg. **6**:65, 1955. 4. Cohart, E. M., and Kandle, R. P.: The Effects of a ragweed control program on ragweed pollen counts, J. Allergy **30**:287, 1959. 5. Woddell, L. S.: Egyptian civilization: Its origin and real chronology and Sumerian origin of Egyptian hieroglyphics. London: Luzak & Co. 1930. 6. Parlato, S. J.: The sandfly (Caddis fly) as an exciting cause of allergic coryza and asthma: II. Its relative frequency. J. Allergy 1:307, 1930. 7. Ozere, R. L.: Demethylchlortetracycline photosensitivity. Canad. M. A. J. **85**:1199, 1961. 8. Horton, B. T., Braun, G. E., and Roth, G. M.: Hypersensitiveness to colds, JAMA **107**:1263, 1936.

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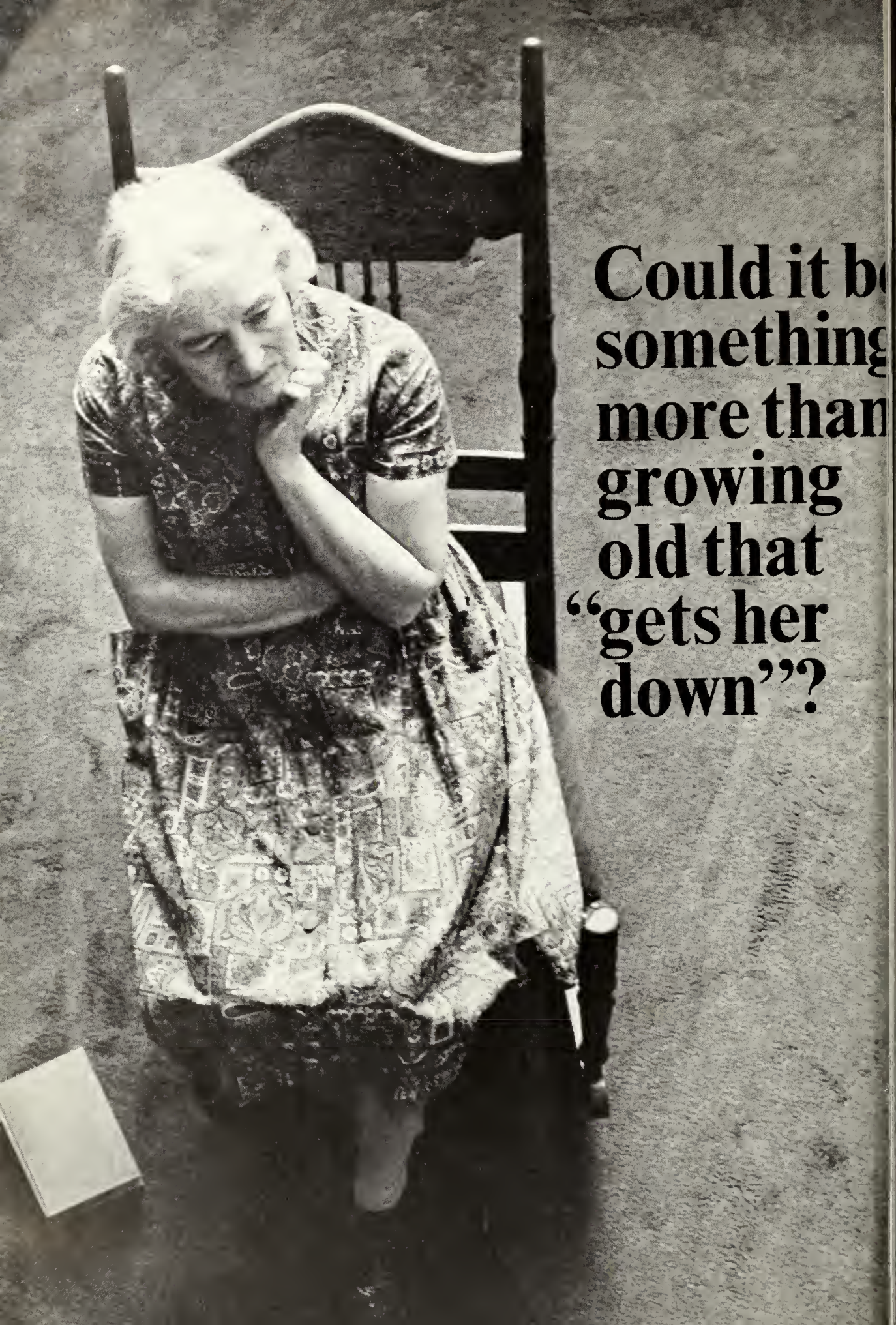
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1. Crunden, A. B., Jr., and Davis, W. A.: Am. J. Obst. & Gynec. *65*:311 (Feb.) 1953.



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Small Airway Disease in the Pathogenesis of Pulmonary Emphysema*

William E. Loring, M.D.**

Introduction

The role of bronchiolitis in the pathogenesis of pulmonary emphysema is an important one and one that is still not fully appreciated. This lack of appreciation is due in part to conflicting information gained from basic pathologic-anatomical research. Although most published studies were made on emphysematous lungs removed from patients dead of the disease, interpretation of the results differed significantly in a number of instances.

Amberson and Spain,[1] Spain and Kaufman,[2] Reid[3] and McLean[4] reported the finding of acute and chronic bronchiolitis with resulting fibrosis, and all of them attributed the associated pulmonary parenchymal damage to small airway obstruction. Anderson and Foraker[5] also found bronchiolar inflammation, but in addition, they noted an accompanying alveolitis and emphasized its importance as the cause of respiratory tissue destruction. Leopold and Gough[6] concluded that bronchiolitis was a constant part of centrilobular emphysema. However, they found bronchiolar narrowing in only 12% of their specimens and complete obliteration of the lumen in none. Wyatt and his associates,[7,8] in an elaborate study of the pathomorphology of the emphysematous complex, reported that the earliest changes were an irregular distention and subsequent dissolution of the first three respiratory bronchiolar divisions. Although these authors also noted the presence of bronchiolitis, they were of the opinion that it was significant in only about half of the lungs examined.

In more recent reports, the bronchioles in lungs with advanced emphysema were described as being but little changed from normal; their authors believed that the important pathological lesions involved only related structures. Wright[9] and Snider et al[10] noted marked attenuation of medium-sized bronchi and attributed airway obstruction to their collapse during expiration. Pratt and his associates[11] focused their attention on prominent perforations in the alveolar walls and concluded that the progressive loss of terminal air sacs was the principal abnormality in pulmonary emphysema.

Differing interpretations of results gained from the study of like materials can be attributed in part to the nature of the specimens and to the various methods employed by the several investigators. Experience has now clearly shown that lung destruction in fatal emphysema is usually so extensive that any evaluation of early bronchiolar or parenchymal lesions is difficult at best. Approaches to the problem frequently reflected the author's professional background. Pathologists employed gross and histopathologic techniques while pathophysiologists tended to utilize fume fixation of expanded lungs and macroscopic examination by stereomicroscopy. After trying all of the described methods, workers in this laboratory are of the opinion that small airway disease can best be evaluated by scrutinizing serial sections of dissected segments of the bronchiolar tree.

While reviewing lungs from the routine autopsy service, a surprisingly high incidence of subclinical, but readily apparent, localized pulmonary emphysema was noted. Both gross and microscopic changes satisfied all

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**Director of Laboratories, Mercy Hospital, Portland, Maine 04101.

of the criteria set down by the Expert Committee of the World Health Organization[12] for the pathologic diagnosis of that disease. In a preliminary study it was found (1) that these emphysematous lesions varied from mild injury of a peripheral secondary lobule to almost total destruction of one or more pulmonary segments, and (2) they increased in number and size with advancing age.

The ready availability of lungs containing a spectrum of minimal to moderately developed, subclinical, emphysematous foci suggested the possibility of collecting a series of specimens showing sequential stages of the advancing disease. The study of such a composite, naturally occurring, experimental model should provide an opportunity to scrutinize and evaluate early, morbid bronchiolar and parenchymal changes without the problems associated with the extensive lung destruction of fatal chronic obstructive pulmonary emphysema. A description of that study follows.

Material and Methods

Forty lungs were collected from the autopsy service. Postmortem examinations were carried out on 30 patients because of fatal trauma or unexplained sudden death in an apparently healthy individual. The remaining 10 patients died during hospitalization for nonpulmonary disease.

Specimen selection was made on the basis of the following conditions: (1) The presence of one or more macroscopic areas of localized pulmonary emphysema, (2) the absence, on gross examination, of coexistent pathologic conditions known to cause emphysematous changes in the lungs, and (3) the absence of clinical, laboratory and roentgenologic evidence of respiratory disease.

All lungs were fixed at a level of inflation approximating full inspiration by (a) introducing a solution of equal parts of 10% formalin and 70% alcohol into the bronchial tree, or (b) by passing warm formalin vapor into an exteriorized bronchus after the lung had been suspended in an airtight negative pressure chamber and expanded by reducing the pressure within the sealed compartment.

The processing of fixed specimens was modified to fit the severity of the disease. Those divisions of the bronchial tree which directly supplied emphysematous parenchyma were resected intact from 4 of the more extensively damaged lungs. This was accomplished by stripping away all normal-appearing pulmonary tissue between the line of excision and the proximal edge of the area of parenchymal emphysema.

One, two or three peripheral secondary lobules were removed as an intact unit from 24 of the less severely involved lungs by dividing the appropriate interlobular septae. The bronchiolar tree and its attendant pulmonary arteriole were resected from 15 of these in such a way as to leave only emphysematous lung attached. The remaining 9 specimens consisted of single, peripheral secondary lobules with minimal centrilobular emphysema. As they constituted the best examples of early disease, the intact lobule was serially sectioned. Parenchymal destruction in the 12 remaining lungs was too extensive to be processed as an intact unit, so representative areas were selected by stereomicroscopy and samples removed for more detailed study.



Fig. 1. Right lung containing relatively extensive, but still subclinical, emphysema. Localized disease in the apical and posterior segments of the upper lobe have become confluent. The anterior segment is involved to a much lesser degree. The middle and lower lobes are within normal limits.

All embedded tissues were sectioned serially at 5 and/or 15 micra. The 9 intact single peripheral secondary lobules were cut at right angles to the main bronchiolar axis. Paraffin sections were stained in rotation with hematoxylin and eosin, by the Goldner-Foote modification of Masson's Trichrome stain and with Weigert's resorcin-fuschin stain for elastic tissue. As part of the microscopic examination, bronchiolar measurements were taken with a micrometer attachment.

Camera lucida drawings of consecutive intermediate, terminal, and respiratory bronchioles were prepared from the serial sections of 3 resected peripheral secondary lobules. The tracings of one of the more typical examples were transferred to sheet plastic, and a model of the diseased segment of the bronchiolar tree was constructed at 50X magnification.

Control specimens were obtained either from uninvolved pulmonary parenchyma within the same lobe as the emphysematous lesion to be studied, or from an

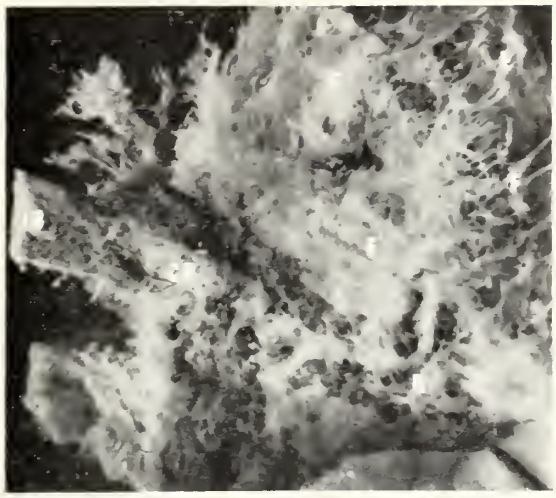


Fig. 2. Partially dissected peripheral secondary lobule immersed in water. The main airway, an intermediate bronchiole (IB), enters at left, gives off a large lateral branch and continues on as a first order conducting bronchiole (CB). The latter appears slightly bent, moderately twisted and locally dilated. After giving rise to several terminal conducting bronchioles, the principal airway divides into two respiratory bronchioles at (R). Coalescent parabronchiolar bullae can be seen along the surface of the principal airway and many of its branches. Confluent collections of panbronchiolar fibrosis (F) are shown at the top just proximal to an area of well developed, subpleural emphysema (E). X 30

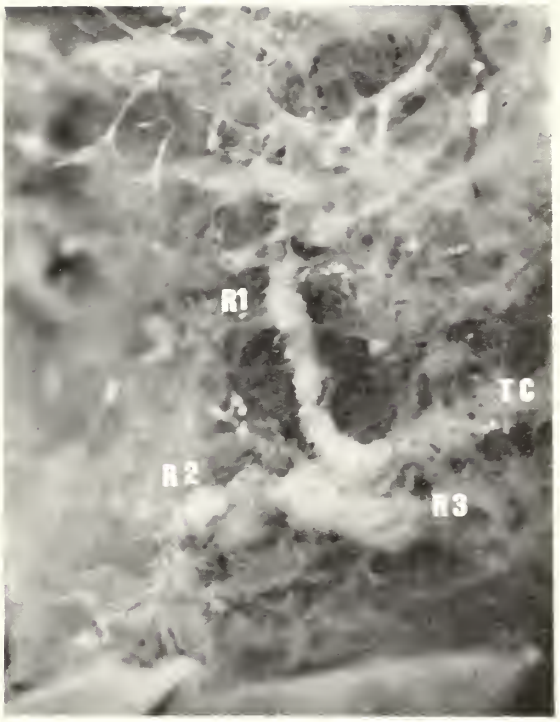


Fig. 3. Partially dissected peripheral bronchiolar tree supplying emphysematous lung. The specimen was photographed while immersed in water. The terminal conducting bronchiole (TC) divides into three respiratory bronchioles. A peripheral orifice of the sharply angulated superior branch (R1) opens directly into emphysematous lung. The middle branch (R2) ends in three rounded dilatations having a cloverleaf pattern; their destroyed subdivisions have become part of the emphysematous process. The inferior branch (R3) appears as a cylindrical dilatation with a terminal orifice that also opens directly into emphysematous lung. Confluent parabronchiolar bullae surround numerous segments of the terminal conducting and respiratory bronchioles. X 60

identical location in another normal lung that had been previously matched for race, sex and age.

Results

Specimens were collected from 37 males and 3 females. Twenty-two males were white. Their ages ranged from 25 to 90 years, with an average of 56.9 years. Fourteen males were negro. Their ages ranged from 21 to 80 years with an average of 42 years. The remaining male was a 48-year-old oriental. The 3 females were 27, 32 and 45 year-old negresses. The average age for the entire group was 47.3 years.

One of the more extensively diseased specimens included in the study is shown in Fig. 1. It is of interest because it illustrates the degree to which pulmonary emphysema can develop and still not be clinically apparent.

Structural alterations of the bronchial tree were most obvious during the dissection of emphysematous peripheral secondary lobules. Conducting bronchioles showed minimal to moderate torsion, frequent segmental dilatation, and moderate to marked angulation (Fig. 2). Anatomical distortion was most pronounced, however, in first order respiratory bronchioles. One or more branches of a terminal bronchiole either formed a 90-degree angle with the parent airway at the point of bifurcation or appeared as a round or sausage-shaped dilatation from which 2 to 4 second order divisions arose (Fig. 3).

Small parabronchiolar emphysematous bullae were found closely attached to both conducting and respiratory bronchioles (Figs. 2 and 3). Communication between these single or confluent air sacs and the lumen of the larger airway could be demonstrated in most instances through a residual, narrowed orifice in the bronchiolar wall. This and other observations suggested that parabronchiolar bullae were remnants of destroyed right-angle monopodial branches (Fig. 7).

The smallest foci of emphysema were usually found near the center of the outer half of diseased peripheral secondary lobules. Directly related functional respiratory units just distal to inflammatory foci in intermediate and terminal conducting bronchioles had been damaged or destroyed. As the disease progressed, the pathologic process expanded peripherally until it reached the pleura and lateral fibrous septae. The apex of the secondary lobule was usually the last to be destroyed.

The following measurements exemplify the size of airways which appeared to play a critical role in the pathogenesis of obstructive pulmonary emphysema. Seg-

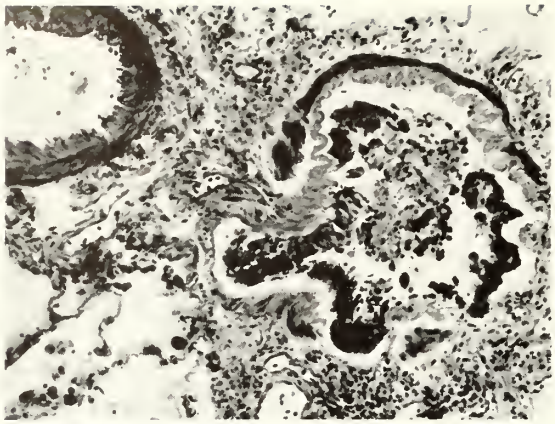


Fig. 4. Chronic bronchiolitis affecting a terminal conducting bronchiole. This was not only the most common type of small airway lesion found in this study, but its histopathologic changes closely resemble those found in lungs from patients with the fatal form of the disease. The pulmonary arteriole on the left is not remarkable. X 150

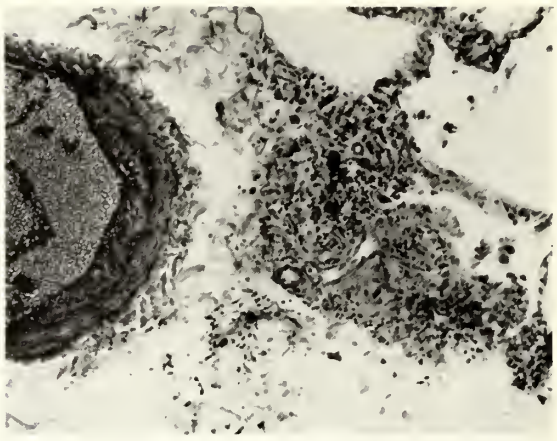


Fig. 5. A segment of terminal conducting bronchiole completely obliterated by intraluminal fibrosis. Interstitial inflammatory mononuclear cells are still present. The degree of structural damage is indicated by the relative sizes of the occluded bronchiole and its associated pulmonary arteriole shown on the left. Intimal proliferation can be seen on the side of the blood vessel nearest the bronchiolar lesion. X 150

ments of the bronchiolar tree studied by serial sections ranged from 10.92 to 20.71 mm in length with an average of 11.68 mm. They directly supplied emphysematous foci and contained from 1 to 3 separate pathologic lesions measuring from 0.5 to 2 mm in length. Although luminal narrowing was found in intermediate bronchioles with transverse external diameters of 3.40 x 2.33 mm, significant obstruction occurred most frequently in terminal conducting bronchioles with transverse external diameters ranging from 0.925 x 0.740 mm to 0.407 x 0.222 mm. Transverse internal diameters in the latter group varied from 0.740 x 0.444 mm to 0.148 x 0.074 mm. When compared with the controls, the airways of diseased bronchioles were reduced from 50 to 80% of normal.

Pathologic changes in the bronchiolar tree varied in type and severity from segment to segment. Although there was some overlapping, the histopathologic findings were sufficiently distinct to be classified as follows:

I. *Chronic Bronchiolitis,* the most common type of small airway disease, was found in both intermediate and terminal bronchioles. Microscopically, it was characterized by: (a) a peribronchiolar cuff of lymphocytes, plasma cells and histiocytes with extension of the cellular infiltrate into the underlying wall and mucosa; (b) normal-appearing or atrophied, but never hypertrophied, smooth muscle bundles; in the more severe lesions small groups of myofibrils had been replaced by fibrous tissue; (c) pronounced thickening of the basement membrane; (d) hyperplasia and/or metaplasia or bronchiolar epithelium so that naturally occurring cuboidal cells had been converted into active goblet cells, pseudostratified columnar or squamous epithelium, and (e) the presence of thick, tenacious, mucocellular plugs in bronchiolar lumens (Fig. 4).

II. *Bronchiolar Fibrosis* could be divided on the basis of the location of lesions into the following: (a) *Intraluminal* fibrosis was an infrequent finding. It characteristically consisted of a collection of fibrocollagenous tissue projecting from one side of the bronchiolar wall and partially blocking the lumen. (b) *Obliterative* fibrosis marked the site of an almost totally occluded lumen. The lesion appeared as single or paired residual collections of tightly entangled collagen fibers with varying numbers of mononuclear cells persisting in their interstices (Fig. 5). Free and intracytoplasmic hemosiderin granules were prominent in some instances. Fragmented myofibrils and small spaces lined by cuboidal epithelium were frequently all that remained of the airway. The length of occluded segments in this group of specimens varied from 0.510 to 0.945 mm. (c) *Peribronchiolar* fibrosis resulted from a much more extensively destructive pathologic process. Pulmonary parenchyma was replaced by residual scars measuring from 1.5 to 7.8 mm in greatest diameter. Individual lesions encompassed from 2 to 5 bronchioles with surrounding respiratory units. In some specimens, adjacent foci had coalesced to form relatively large collections of fibrous tissue (Fig. 2). Histologic preparations of tissue blocks from the scarred lung showed a loose mesh of collagen fibers, interstitial collections of mononuclear cells, varying-sized residual spaces, old blood pigment and deposits of carbon particles. Small spaces lined by atavistic bronchiolar epithelium indicated the location of a destroyed airway (Fig. 6). All conducting and functional respiratory units distal to the foci of fibrosis were either markedly dilated or completely destroyed; in most instances, they formed the proximal edge of the emphysematous process.

III. *Bronchiolar "Valves"* were of two types and each one appeared to be quite capable of causing mechanical airway obstruction.

(a) *Branch Flap Valves* were found at points of bi-

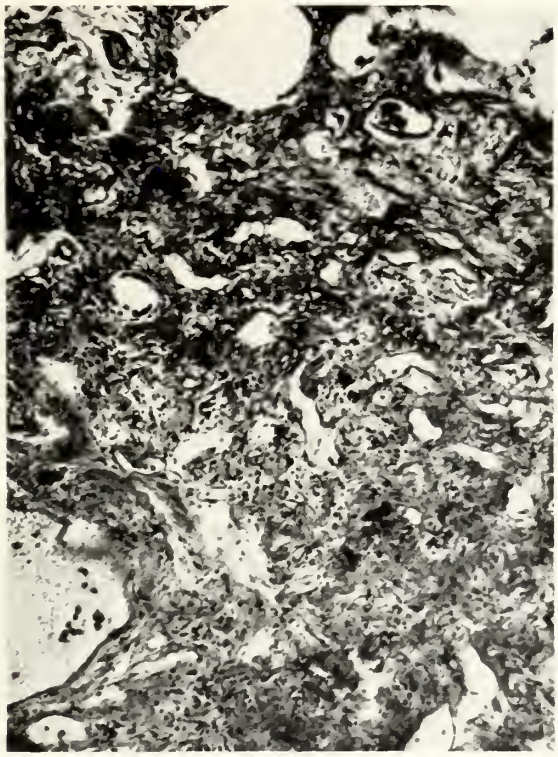


Fig. 6. Panbronchiolar fibrosis. A loose network of fibrocollagenous tissue has replaced the bronchiole and several tiers of surrounding alveoli. The mononuclear cell infiltrate suggests continued inflammatory activity. The larger, amorphous, dark-staining granules are hemosiderin pigment. Some of the residual air spaces are lined by cuboidal epithelium. Although the outer coat of the pulmonary arteriole at the lower left blended with the scar, no thrombi were found. X 150

furcation and could be divided into the following types:

(1) A fibrous tissue lip containing lymphocytes in large numbers, fewer plasma cells and histiocytes, extracellular collections of particulate carbon and smaller clumps of hemosiderin granules significantly narrowed the lateral orifice of the right-angle monopodial branches. Limited mobility of this fibrocellular flap prevented complete occlusion of the airway – usually a respiratory bronchiole. Distal to the constricted opening, morbid bronchiolar changes ranged from moderate dilatation to almost total destruction. In the latter instances, a parabronchiolar bleb was all that remained of the airway (Figs. 2, 3, 7).

(2) Terminal orifices of first or second order respiratory bronchioles were deformed in such a way as to create an even more effective tissue branch valve. The less stable, outer, alveolar-containing part of the wall had broken away from adjacent supporting respiratory units, and, as a result, was freely movable. Reconstructions of serial sections showed that the detached flap could permit the easy passage of air during inspiration and effectively block its egress during expiration. The terminal orifice always opened directly into a parenchymal bulla or subpleural bleb.

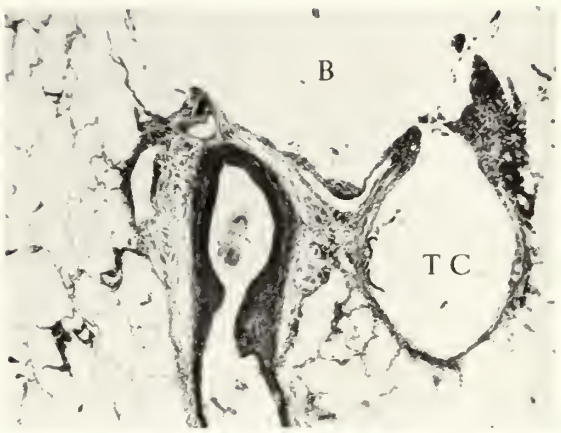


Fig. 7. Narrowed lateral orifice of destroyed right-angle monopodial bronchiolar branch. A dense concentration of inflammatory cells and carbon particles are present in the wall of the opening which connects a terminal conducting bronchiole (TC) with an emphysematous bleb (B). At this level cellular debris is seen partially blocking the foramen. All supporting connective tissue has been destroyed transforming the adjacent bronchiolar wall into a tissue valve which can close when the pressure within the bleb becomes sufficiently high. The bifurcating pulmonary arteriole to the left is not remarkable. X 150

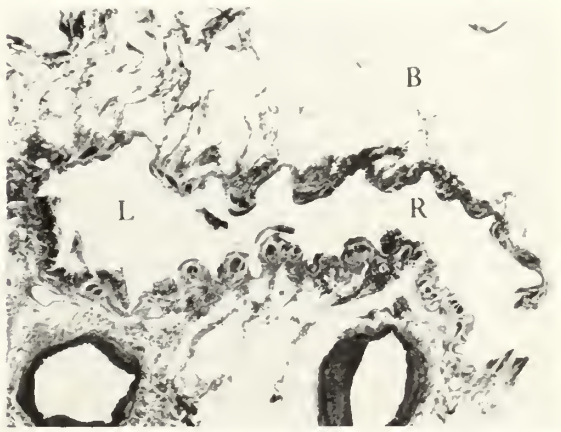


Fig. 8. Segmental compression valve formed by a first order respiratory bronchiole (R), the right branch of a terminal conducting bronchiole. The section was taken at the level of bifurcation. Fragments of destroyed alveolar walls can be seen as tissue tags on the outer, movable wall of the valve. The parabronchiolar bulla (B) has extended to partially involve the outer wall of the left respiratory bronchiolar division (L). The incision in the right lateral wall of the specimen was made during the dissection to permit stereomicroscopic inspection of the lumen. The divisions of the pulmonary arteriole seen below their respective bronchioles are not remarkable. X 150

(b) *Segmental Compression Valves* were also lesions of high order respiratory bronchioles. They too, resulted from the destruction of supporting respiratory parenchymal attachments to that part of the bronchiolar wall not anchored by fibrous tissue to the pulmonary arteriole (Fig. 8). The involved segment in this type of

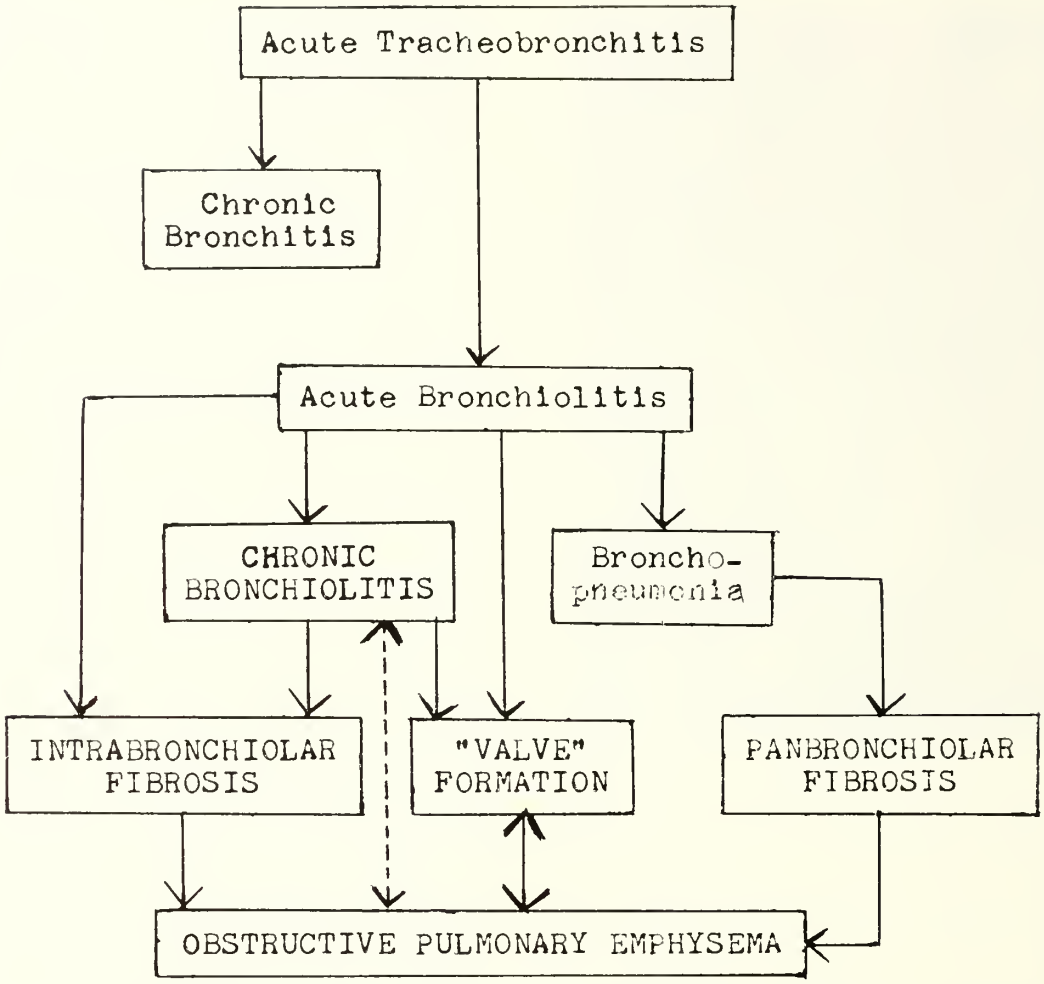


Fig. 9. Schema showing the pathogenesis of chronic obstructive pulmonary emphysema as suggested by the results of the present study. Those conditions considered to be clinically and/or pathologically more important are shown in capital letters. An interrupted line is used to connect chronic bronchiolitis and obstructive pulmonary emphysema because the blocking mechanism in this type of airway lesion appears to be functional rather than anatomical.

lesion, however, was located in the body rather than at the end of the airway. The findings indicate that this type of valve became operational only after all supporting structures were destroyed and the detached portion of the bronchiolar wall was sufficiently mobile to respond to differential changes in pressure during respiration. The degree of tension within adjacent parabronchiolar bullae appeared to be the controlling factor; a relative increase could compress the wall and narrow the airway.

Discussion

Early and minimal emphysema cannot be detected clinically. Even when the pathologic process is well developed, roentgenograms of the chest are of little value in defining the true limits of lung destruction. Pulmonary function studies and blood gas determinations provide a dependable index of the disease's severity only after the reduction in respiratory reserve approaches a critical level. A detailed anatomical examination of the resected lung is, therefore, still the best source of reliable information about the very early and fundamental bronchiolar and functional parenchymal lesions in chronic obstructive pulmonary emphysema. The indicated role of small airway disease in the pathogenesis of this pathological process is shown in Fig. 9. Intermediate, conducting, and first order respiratory bronchioles are natural sites of smoldering infection with consequent luminal alteration for the following reasons: (1) They all lack the means for primary defense which are normally present in the larger divisions of the bronchial tree, e.g., cilia, mucus production, etc.; (2) Terminal conducting bronchioles constitute the narrowest air passages in the lung, and (3) Respiratory bronchioles are normally weakened structurally by the presence of alveoli in their walls. In all but one instance, the actual bronchiolar lesions responsible for obstruction were simply manifestations of natural inflammation and repair.

Like their larger parent structures, conducting and first order respiratory bronchioles lengthen and dilate during the inspiratory phase of respiration and shorten and contract during expiration. Airway obstruction in two of the three main types of pathologic changes described above were clearly mechanical in nature. It would appear, therefore, that they would only slightly impede a column of air moving into the lung but more effectively block its egress. Over a period of time, increasing volumes of trapped air could cause (a) progressive distention of respiratory units distal to the obstruction(s), (b) compression of blood vessels in their walls, (c) nutritional atrophy of their supporting structures, and (d) eventual rupture with coalescence of terminal respiratory bronchioles, alveolar ducts and alveoli to form emphysematous bullae. If this primary process repeats itself in numerous secondary lobules throughout the lung over a long period of time, all of the signs and symptoms of chronic obstructive pulmonary emphysema eventually become readily apparent.

Airway obstruction by the third type of lesion, chronic bronchiolitis, appears to be more functional than mechanical. It would be reasonable to assume that coexistent intramural and peribronchiolar inflammatory infiltrates, a thickened basement membrane, and fibrous replacement of adjacent myofibrils could limit dilatation and contraction of the involved segment during the respiratory cycle. An actual luminal block apparently occurs only when the above conditions are superimposed on localized mucosal hyperplasia and/or mucocellular plugs. The latter situation is not an uncommon finding in routine paraffin sections of emphysematous lungs.

The findings in this study also suggest the possibility that untreated bronchiolitis can be a self-perpetuating disease. Small airways that have become twisted, locally dilated and/or angulated very probably have lost their natural ability to expand and contract as the patient breathes. Mucus, fluid secretions, cellular detritis that are incompletely expelled tend to form pools. Retained debris in this situation makes an excellent culture media for invading organisms. Clinical evidence indicates that patients can carry their smoldering infections for long periods of time. Periodic acute flare-ups are not uncommon, and the stage is continually set for the start of a new cycle of bronchopulmonary destruction.

Thickening of the basement membrane is one of the more striking bronchiolar changes in lungs afflicted by chronic obstructive emphysema. Explanations of this particular response to inflammation have never been really satisfactory. It has been generally accepted, however, that the thickening is due to hyperplasia of reticulin and elastic tissue fibers; both tissues can be readily demonstrated histochemically.

Recently reported studies by Pierce and his associates[14] have raised some doubt about the validity of this concept. Using immunohistochemical techniques, they have presented convincing evidence that basement membranes are antigenically and chemically definable mucoproteins which are synthesized by adjacent epithelial cells. Subsequent studies using proteolytic techniques[15] have further indicated that these mucoproteins are chemically distinct from the scleroproteins. Although there is as yet no proven relationship between the degree of epithelial hyperplasia and basement membrane thickening, it was of interest to note in the present study that hyperplastic bronchiolar lining cells were almost always anchored to an unusually prominent, subjacent connective tissue base that frequently appeared to be several layers thick.

Summary

Lungs with anatomical emphysema that ranged from focal centrilobular damage to extensive lobar destruction were removed at autopsy from 40 individuals who had no known history of respiratory disease. After special fixation, the emphysematous lesions were resected and arranged in order of progressive enlargement to form a composite, naturally occurring experimental model for the study of early and evolving small airway disease. This approach to the problem was designed to overcome the difficulties so frequently encountered in the search for still present small airways showing early lesions in end-stage emphysematous lungs from patients dead of the disease. Supplying bronchiolar segments with attached damaged respiratory tissue were removed by manual dissection, serially sectioned as an intact unit, differentially stained, and scrutinized microscopically. Spatial deformities of the bronchiolar tree that are not apparent in routine gross pathological examinations and specific, obstructive bronchiolar lesions were described and classified. Probable mechanisms by which they interfere with the passage of air, produce anatomical emphysema, and foster a smoldering bronchopulmonary infection were considered.

References

1. Amberson, J. B., and Spain, D. M. A mechanism explaining chronic progressive pulmonary bullous emphysema. Trans. Assoc. Amer. Physicians. 60: 92-102, 1947.
2. Spain, D. M., and Kaufman, G. The basic lesion in pulmonary emphysema. Am. Rev. Tuberc. 68: 24-30, 1953.
3. Reid, L. M. Pathology of chronic bronchitis. Lancet 266: 275-278, 1954.
4. McLean, K. H. The pathogenesis of pulmonary emphysema. Amer. J. Med. 25: 62-74, 1958.
5. Anderson, A. E., Jr., and Foraker, A. G. Pathogenic implications of alveolitis in pulmonary emphysema. Arch. Path. 72: 44-58, 1961.
6. Leopold, J. G., and Gough, J. The centrilobular form of hypertrophic emphysema and its relations to chronic bronchitis. Thorax 12: 219-235, 1957.
7. Wyatt, J. P., Fischer, V. W., and Sweet, H. C. The pathomorphology of the emphysema complex. Part I. Am. Rev. Resp. Dis. 89: 533-560, 1964.
8. Wyatt, J. P., Fischer, V. W., and Sweet, H. C. The pathomorphology of the emphysema complex. Part II. Am. Rev. Resp. Dis. 89: 721-735, 1964.
9. Wright, R. R. Bronchial atrophy and collapse in chronic bronchitis and obstructive pulmonary emphysema. Amer. J. Path. 37: 63-77, 1960.
10. Snider, G. L., Brody, J. S., and Doctor, L. Subclinical pul-
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Passage of the Miller-Abbott Tube

TIBOR DOBY, M.D.*

On occasion hours of valuable time is lost in trying to advance a Miller-Abbott tube into the duodenum and beyond, without success. As the attempt at decompression is usually accompanied by partial or complete mechanical obstruction, valuable time is lost by the surgeon in his attempt to relieve the obstruction and to solve this menacing problem. The restoration of electrolyte balance and normal blood pressure, and getting the patient out of shock may at times be delayed. This does not mean only a time loss but also loss of opportunity for the patient to regain homeostasis.

The two main causes of inability to pass the Miller-Abbott tube are:

1. The accumulation of gas in the small bowel. This pushes the duodenum and stomach upward and the resulting change in the position of the pyloric canal makes the path of the tube kinked or twisted. Probably this is what explains Wangensteen's statement: "Unfortunately in the patients with the greatest distention, in which quick intubation of the duodenum is most important, in these very patients, the greatest difficulty is had, almost invariably. The greater the distention, apparently, the greater difficulty in securing early migration of the tube out of the stomach."
2. Spasm of the pyloric canal is usually the main problem. We do not give these patients contrast material routinely and therefore we are not aware of the tremendously increased peristaltic activity of the antrum and spasticity of the pyloric ring. However, if one watches the Mercury filled Silversten bag of the tube being moulded by violent peristaltic waves and the inability for it to pass the tight pyloric ring, then one becomes aware of the functional pathology in that region.

The administration of spasmolytic agents alone does not help in most of the cases, and they are frequently not used at all. A recent publication using the topical application of Xylocaine® for relaxation of the duodenal loop for diagnostic purposes gave me the idea, that probably it could be used as well to relax the pyloric spasm in obstruction.

The following is a designation of how topical Xylocaine was used in two cases at the Mercy Hospital.

1. The patient is given 0.5 mgm. Atropine Sulfate s.c.
2. The patient is positioned with the right side down and the tube directed toward the pylorus under fluoroscopic control.
3. Xylocaine Viscous® is injected through the "suction" part of the Miller-Abbott tube.

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In both of our cases the tube and Mercury bag slipped into the duodenum after a half hour with the patient's right side down. In neither of the cases did the Miller-Abbott tube with the bag slide into the duodenum in the same position for several hours before the injection of Xylocaine Viscous.

This material is very viscous and has to be shaken before used. It was difficult to push 10 cc. of it through the tube in our first case and I think only a few cc.'s reached the prepyloric area, because the rest was sticking to the wall of the tube. Realizing this difficulty, in our second case we injected a solution of 5 cc. Xylocaine Viscous with 5 cc. normal saline, which lowered the viscosity somewhat and made the injection less difficult. Even so, it took a few minutes to push the solution through the suction tube. Injection of 5 cc. of saline afterwards to wash the sticky Xylocaine Viscous off the wall is recommended. Warming Xylocaine Viscous to body temperature also decreases viscosity. The short histories of our two cases follow.

CASE REPORTS

1.) A 25-year-old female patient had an exploratory laparotomy with appendectomy 1 and ½ years prior to admission at which time pelvic inflammatory disease was also noted. This time she was admitted because of severe cramps for 5-7 days, temperature 103° and a blown-up feeling of her abdomen. Abdominal examination revealed marked distention and high-pitched bowel sounds. She was tender in the lower abdomen. On pelvic examination extreme tenderness was noted in both adnexae, more marked on the left. White blood count 5000 with 88 polys. Sedimentation rate 39. The diagnosis was pelvic cellulitis causing partial bowel obstruction which was complicated by ileus. The x-rays were found to be consistent with mechanical obstruction, with air fluid levels in the markedly distended small bowel and practically no gas in the colon. Antibiotics and supportive therapy were given and a Miller-Abbott tube introduced. The next day it was found that the Miller-Abbott tube was coiled in the fundus of the stomach. The patient was sent to the X-ray Department to position the tube. After positioning of the tube with the tip directed toward the pyloric canal, the patient was sent back to the ward and after three hours of waiting the tube still did not pass the pylorus. Marked moulding of the Silversten Mercury bag was seen under fluoroscopy. To prevent further delay, we gave the patient 0.5 mg. Atropine Sulfate S.E. and 10 cc. Xylocaine Viscous through the suction part of the Miller-Abbott tube. In a half hour the tip of the tube was observed to have slipped into the duodenum and carried further without difficulty.

2.) A 33-year-old man admitted for his fulminating ulcerative colitis with several perforations and abscess formation along the ascending colon and descending colon. In this desperate situation after long deliberation it was decided to try to help the patient with resection of part of the colon and drainage of the abscesses. He experienced several episodes of breakdown of sutures. The patient had a downhill course and vomited profusely. The electrolyte balance could be maintained only by intravenous saline and nothing was tolerated by mouth.

It was essential to establish the site of obstruction, which was strongly suspected because of the constant vomiting and also the accumulation of fluid and gas in the stomach and in several small bowel loops. In the course of manipulations with the Miller-Abbott tube it finally came to the point that the tip of the tube apparently was lying in the cap of the duodenum, but the Silversten bag with the Mercury was caught in front of the pylorus being moulded with the violent peristaltic waves in the distal antrum. Many hours of trial and repositioning of the Miller-Abbott tube and finally three hours of waiting with the patient in the right side down position, still did not help in getting the bag through the pylorus. In the proper position we injected into the suction tube 5.0 cc. of Xylocaine Viscous mixed with equal amount of saline and injected 0.5 mg. Atropine Sulfate S.C. Within a half hour the Mercury-filled bag was carried through the pylorus and within a few minutes the tube was fowarded to the ligamentum Treitz and further. The downhill course of the patient was reversed.

The patient finally succumbed to the multiple abscesses, and peritonitis; however, at a certain point the downhill course of his disease was stopped by being able to foward the Miller-Abbott tube.

These two cases certainly are not sufficient for final evaluation. Liotta in his study for diagnostic purposes used 20 cc. of Xylocaine Viscous in more than 500 cases without any ill effects. Rarely in men did urinary retention occur in the evening, with spontaneous return of urinary function the following morning. In the vast majority of his cases however, he did not observe even this minor difficulty. In our two cases no ill effects were noted.

We should keep in mind Wangensteen's words: "If efforts at conservative decompression are persisted for too long, the distended lower ridges of the bowel are damaged and the patient comes to operation a worse risk than if operation had been performed earlier." If we think of this statement, we are led to believe that the described method is certainly worth the trial.

ACKNOWLEDGMENT

The author wishes to thank Dr. Morrill Shapiro and Dr. Louis A. Asali for permission to use this method on their patients.

REFERENCES

Wangensteen, O. H. Intestinal Obstruction. Charles C. Thomas Publishers, Springfield, Illinois, 1955.

Jacquemet, P. D., Liotta, P., Mallet-Guy. The Early Radiological Diagnosis of Diseases of the Pancreas and Ampulla of Vater. Charles C. Thomas Publishers, Springfield, Illinois, 1965.

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monary emphysema: Incidence and anatomic patterns. Amer. Rev. Res. Dis. 85: 666-683, 1962.

11. Pratt, P. C., Hague, A., and Klugh, G. A. Correlation of post mortem function and structure in normal and emphysematous lungs. Amer. Rev. Resp. Dis. 83: 856-865, 1961.
12. Chronic cor pulmonale. Report of an expert committee. World Health Organization, Technical Report Series. No. 213, 1961, p. 15.
13. Reid, L. M. Correlation of certain bronchographic abnormalities seen in chronic bronchitis with the pathologic changes. Thorax 10: 199-204, 1955.
14. Pierce, G. B., Jr., Beals, T. F., Ram, J .S., and Midgley, A. R. Basement Membranes: IV. Epithelial origin and immunologic cross reactions. Am. J. Path. 45: 929-961, 1964.
15. Mukerjee, H., Ram, J. S., and Pierce, G. B., Jr. Basement Membranes: V. Chemical composition of neoplastic basement membrane mucoprotein. Am. J. Path. 46: 49-57, 1965.

Infant Resuscitation*

FRANCIS X. MACK, M.D.**

It is indeed a pleasure to welcome the New England Society of Nurse Anesthetists to Portland, Maine, and on behalf of the Anesthesiology Staff at Mercy Hospital, I wish to extend Greetings and Best Wishes.

The last time I appeared before the New England Society of Nurse Anesthetists, which was several years back, I had the opportunity to deliver a paper at the Bradford Hotel in Boston. On that occasion, I believe I spoke on a rather non-scientific subject entitled "The Relationship of the Nurse Anesthetist and the Physician Anesthesiologist."

In that presentation, we noted the great number of Nurse Anesthetists needed throughout the country to cover the Anesthetic needs of the hospitals. That statement is related especially to the field of Obstetrical Anesthesia, for we note in a recent survey that, "One is struck by the dearth of participation of Anesthesia Residents in the field of Obstetrical Anesthesia as reflected by the fact that in only 15 of 439 Maternity Hospitals, do Anesthesia Residency Programs exist."

Consequently, we find in the Survey of the United States today that the distribution is as follows:

Nurse Anesthetists	31%
O.R. Personnel:	
Aides & Orderlies	27%
Obstetricians	21%
Physician Anesthesiologists	14%
Anesthesia Residents	7%

As Doctor Hingson noted in Anesthesiology, July-August 1965: "It would seem that Anesthesia Care and this includes Resuscitation of the Newborn Infant is definitely Second Class!" He has noted in his survey that there is an increasing incidence of Cerebral Palsy, a 30% mortality rate of infants born to diabetic mothers, 4-6% mortality in breech deliveries, 20-30% mortality in premature separation of the placenta, 10-15% mortality in infants weighing less than two (2) Kilograms and so on down the line. I think it is quite obvious from these figures that much of the mortality could be reduced not only if better anesthetists were available for parturient but also if the undertaking of infant or newborn resuscitation were employed which recognized some of the fundamental, basic principles of Respiratory Physiology.

We are all well aware of the fact that following administration to the mother, the placental transfer to the fetus, anesthetics and narcotics, Vasopressors and Oxytoxics — these same drugs obtund fetal reflexes and undoubtedly reduce the infants' chances of breathing and responding satisfactorily to its new environment.

Circulatory dynamics are altered and the closure of fetal circulatory shunts are definitely impeded.

Mechanical causes of fetal depression, we are all aware, include all those causes which produce some hypoxia, either just before or during delivery; such as, premature separation of the placenta, a prolapsed cord, thrombosis of the cord and severe traumatic delivery of the infant. There are other mechanical factors involved which may be related to all anomalous conditions of the infant particularly concerning its pulmonary or cardiovascular structures. Acquired conditions such as pulmonary infections, hyaline membrane and other related disorders come under our scrutiny here and these are the infants who must receive some resuscitation if they are to survive. (Other causes of insufficient respiration of the neonate include:

1. Amniotic fluid aspirated
2. Upper respiratory obstruction
3. Pneumothorax
4. Diaphragmatic hernia
5. Unilateral hydrothorax.)

Techniques for cardiorespiratory resuscitation have been described as early as 1780 by Sheele and in 1885 by Dr. John Snow. Many techniques in the past century have been described, some of them with a good deal of logical and scientific thought behind them and others which are extremely dangerous. Even today because of the lack of sufficient data and knowledge; however, there is rare agreement among authors as to the most efficient and safe method of resuscitation of the newborn infant.

To provide a few more important statistics, (and I do not wish to burden you with them), it has been reported by several authors that more than 35% of all deaths in the first year of life occur within the first 24 hours and approximately 50% of these deaths are related to cardiorespiratory pathology and anoxia.

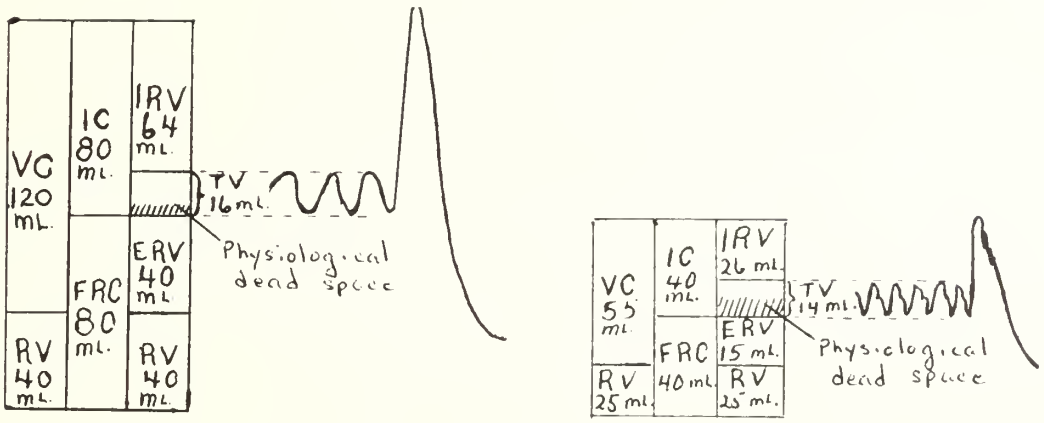
How many neurological defects resulting from prolonged respiratory depression will probably never be known but we do recognize that neurological tissue is one of the first tissues of the body to suffer from oxygen lack; therefore, let it be clearly understood in the light of these findings that the prevention and/or treatment of cardiorespiratory depression is clearly a Delivery Room procedure and quite aptly, it is within the province of the Delivery Room personnel to be familiar with and to be able to expedite in a most deft manner the most modern and proper methods of resuscitation at hand. This particularly applies to the Anesthetist since that person should be more versed in the art of resuscitation than any other person present.

*Delivered before N.E.S.N.A. Workshop, Portland, Maine 9/9/66.

**Director, Department of Anesthesiology, Mercy Hospital, Portland, Maine 04101.

TABLE 1*

NORMAL INFANTS RESPIRATORY V.C., T.V., IRV & ERV
NORMAL 3 KG INFANT
3 KG INFANT WITH RESP. DISTRESS



36	Respiratory Rate/Minute	70
0.3	Dead Space/Tidal Volume Ratio	0.6
5	Intraesophageal Pressure Diff. (cm.HO)	18
4.4	Compliance (ml./cm/HO)	1.0
29	Resistance (cm.HO/Liter/Sec.)	23
40	Total Work/Breath (gm.cm.)	111
1440	Total Work/Minute (gm.cm.)	7770

*Table from IAC-Vol. 3, No. 2, February, 1965 – (Reproduced from paper by Clement A. Smith, M.D., "The Newborn Infant." Based on C. D. Cook, et al., Exhibit. VIIIth International Congress of Pediatrics, Copenhagen, 1956)

What is the strongest stimulus to respiration in the newborn? Probably the asphyxial stimulus; i.e., the increased CO_2 and depressed O_2 level of the blood acting upon the respiratory center. Certainly there are others such as, the tactile, thermal and enterceptive types – and yet – we all recognize that breathing of the infant can start with adequate umbilical circulation without severe asphyxia. We also recognize that the respiratory center in the medulla of the infant is less resistant to hypoxia and asphyxia than in the adult. There is no question that up to six (6) hours after birth the respiratory center can become more severely depressed with a very high CO_2 in the infants blood and, therefore, further depresses respiration. The so-called last line of defense, the carotid body chemoreceptors, in the newborn, are probably poorly developed as evidenced by the fact that if you expose an infant to 10 or 12% O_2 there is little or no increase in respiratory rate such as there is in an adult. Therefore, we can safely say, that the hypoxic infant requires more acute attention to correct the hypoxia deficiency than an adult. The pH. of infants blood has been studied very little and there have been so many interpretations of its alteration that we won't mention the effect.

Infants, frequently at birth, will ordinarily develop negative intrathoracic pressures between 25-50 cm H_2O to attain normal tidal values – in severe cases of respiratory distress – they have been recorded as high as 70 cm of H_2O. We acknowledge that pressures as high as 25-30 cm of H_2O positive pressure will rupture an infant's lung however and consequently very rarely will we exceed this pressure for a period of .3 seconds.

It is also well known that during intra-uterine life only 10-20% of the Right Heart blood goes through the lung. Normally in the newborn, this increases to 75% but if there is prolonged anoxia, pulmonary vascular resistance increases and instead of 75% of the blood coming from the right ventricle, which should now go through the pulmonary vasculature, it will be shunted through the foramen orale or the ductus arteriosus and prevent these from closing normally. This is another solid reason for properly resuscitating a baby as early as possible and not allowing prolonged anoxia.

Forty-five (45%) percent of those that died had severe respiratory distress primarily and at autopsy revealed either hyaline membrane disease or atelectasis.

Table 4 shows it takes over four (4) days to get the O_2 saturation up to normal even in normal infants. At the end of four (4) days it is only 82 mm in Hg.

Birth Asphyxia includes the increased CO_2 and acidosis with a fall in pH. CO_2 increases at the rate of 10 of Hg/mm in the apneic infant and increased respiratory acidosis definitely leads to cardiac depression and therefore increased metabolic acidosis which further aggra-

TABLE 2*

(MORTALITY RATE AS RELATED TO PREMATURITY)
Mortality and autopsies showing hyaline membrane formation, Boston Lying-in Hospital, public and private wards, 1959 and 1961 (excluding Joslin Diabetic Clinic)

Birth Weight (kg.)	*Live Born*	*Died*		*Autopsies*		
		No.	*(%)*	*No.*	*H.M.S. No.*	*(%)*
<1	40	37	(93%)	35	9	(26%)
1.0—1.5	60	27	(45%)	23	16	(70%)
1.5—2.0	157	16	(10%)	15	8	(53%)
2.0—2.5	425	20	(4.5%)	20	9	(45%)
All<2.5	682	100	(14.5%)	93	42	(45%)
All>2.5	10,146	40	(0.4%)	32	4	(12.5%)

*Table from IAC-Vol. 3, No. 2, February, 1965 – (Reproduced from paper by Clement A. Smith, M.D., "The Newborn Infant.") Data mainly the work of Drs. Peter Auld, Nicholas Nelson, L. Samuel Prod'hom, Henry Levison, R. Wesley Boston, and Miss Ruth Cherry.

vates cardiac depression. All factors taken into consideration today lead us to believe now that newborn resuscitation should be undertaken as swiftly and smoothly as possible to prevent deterioration and possible harmful effects of hypoxia hypercarbia and acidosis.

We do not believe in nor do we subscribe to the theory that, "Let nature take its course" and the apneic infant will initiate his own respirations without aid and at the same time, we do not believe in injudicious haste with rapid, improper means of providing resuscitation where more harm than good might be done.

Recommendations for the prevention of depression of the newborn:

1. Light anesthesia and prepartum medication.
2. Prevention of hypertension in the mother.
3. O_2 administration to the mother in case of evidence of depressed fetus either by EKG, Bradycardia or Meconium staining.

Diagnosis of the depressed infant is relatively simple by the Apgar Scoring Method:

7-10 = Healthy Infant
4-6 = Somewhat depressed
0-3 = Severely depressed

Apgar System does have its faults and some hospitals have given up this method but for general purposes it is still well recognized as evidenced by a Collaborative Study of over 32,000 Cerebral Palsy infants in thirteen (13) University Centers that the Score was remarkably consistent by Drage Kennedy and Schwartz (1964 OBS & GYN).

Procedures recommended for resuscitation:

1. Position:
 (a) Semilateral recumbent for drainage of upper respiratory tract and preventing tongue from occluding airway.
 (b) Observe patient: – if he is retracting – not breathing at all – watch color.
2. Prevent aspiration by gentle suction of pharynx – infant may hold breath till asphyxiated. Stimulate by pharyngeal manipulation – use of bulb should be gentle and very brief. "Milking" the trachea is mentioned only to be condemned. Babies needing help are those with Score 6 or under.
3. O_2 may be blown over face but frequently just putting mask to face will cause infant reflexly to hold breath. Squeezing chest or abdomen are ineffective and may do more harm than good. Putting child in cold and hot water is only mentioned to be condemned for precious minutes may be lost in such futile gestures.
4. IPPB properly administered by mask may be attempted here, but again the child with such vagotonic reflexes may undergo laryngeal spasm and this may be ineffective. O_2 cannot cause retrolental fibroplasia unless it's over a few hours at high concentration.
5. Use an *O* airway and give O_2 by IPPB and hold chin up: – 25-35 cm of H_2O should not be exceeded.

The severely depressed infant with a score of 0-4:

We recommend that all of these infants be first suctioned and then intubated after placing the infant in a supine position on a small table in the Delivery Room and with an Assistant standing at the childs side, with one hand under the post chest wall and elevating the chest about 2-4 inches off the table with head in extended position, the blade of the laryngoscope (Miller) is introduced gently into the mouth. The epiglottis is then visualized and lifted anteriorly – gently – to expose the vocal cords. Frequently the infant is so depressed that there are no pharyngeal or laryngeal reflexes and the *O* endo tube is inserted. This tube is one that has an Ayer or *Y* connector. One end of the *Y* is then connected to the tube of O_2 from an *E* tank. This O_2 tube is connected to an H_2O manometer attached to the stand. This manometer is in water which will allow a maximum pressure of 30 cm and by intermittently placing the thumb over the open *Y* end, IPPB pressure is applied but not exceeding the 30 cm which is relatively

TABLE 3*

(ALVEOLAR AND ARTERIAL SHUNT SHOWS NORMAL AMOUNTS)
Oxygen and carbon dioxide gradients in normal adults and normal infants.

	*In Normal Adult***	*Normal Newborn Infant*†*
	(All values in mm. Hg)	
PAO_2	104	107.0 ± 6.3
PaO_2	95	79.3 ± 10.4
A-a P_{O_2} gradient	9	27.2 ± 9.6
$PACO_2$	38 — 40	32.7 ± 4.0
$PaCO_2$	40	34.8 ± 6.5
a-A P_{CO_2} gradient	0 — 2	1.9 ± 4.0

*Table from IAC-Vol. 3, No. 2, February, 1965 – (Reproduced from paper by Clement A. Smith, M.D., "The Newborn Infant.") The tables are from those exhibited by Prod'hom, Cherry, Nelson, Levison and Smith at Eleventh International Congress of Pediatrics at Lisbon in 1962.

**Comroe et al., Riley et al.

† n = 19, BW = 1.70 – 3.74 kg., age = 6 h – 74 h.

Compare sides.
A = Alveolar
a = Arterial

Causes: Either shunting or inability of O_2 to cross pulmonary alveolar membrane.

TABLE 4*

CHANGES IN (A-a) P_{O_2} IN NEWBORN INFANTS

Age	*20m*	*1 h*	*4 h*	*24 h*	*2-4 d*	*Adults*
Number of Infants	13	15	12	15	20	—
PaO2 mm. Hg	55 ± 8	58 ± 12	68 ± 9	70 ± 8	82 ± 12	95
PAO_2 mm. Hg	101 ± 8	98 ± 9	102 ± 7	107 ± 8	108 ± 12	104
PAO_2—PaO_2 mm. Hg	47 ± 6	40 ± 15	34 ± 12	37 ± 7	26 ± 11	10
Venous Admixture %	37 ± 9	33 ± 14	23 ± 9	20 ± 6	13 ± 7	7
True R — L Shunt %	—	24 ± 4	22 ± 5	24 ± 4	—	2 - 4

*Table from IAC-Vol. 3, No. 2, February, 1965 – (Reproduced from paper by Clement A. Smith, M.D., "The Newborn Infant.") The tables are from those exhibited by Prod'hom, Cherry, Nelson, Levison and Smith at Eleventh International Congress of Pediatrics at Lisbon in 1962.

safe in the newborn infant. The incidence of infants requiring endotracheal intubation is only 2-3% but at some Centers has been reported at 18% of operative obstetrics. Aspiration of the tracheobronchial tree can be effective by placing a small lubricated catheter down the *Y* tube into the trachea but frequently the yield is very small.

A few puffs through the tube may stimulate respiration spontaneously but frequently in a very severely depressed infant, it may take as long as 15-20 minutes for the infant to breathe with any spontaneity. At any rate, the tube should be left in until the heart rate is over 100, color is good and respiration somewhere within normal limits. Such prompt action even in the face of the severest odds, even when no heart beat is discernible, at the outset, may be a lifesaving procedure.

If the heart beat is not discernible within a few minutes of such respiratory resuscitation and cardiac arrest is suspected, we place the index and middle fingers of the right hand over the middle 1/3 of the sternum and at 70 per-minute, compressions are undertaken.

It is not within the scope of this presentation to include drug therapy for these infants; suffice it to say that all analeptics such as picrotoxin, Metrazol®, Coramine® alpha lobeline are to be condemned. For these only increase the metabolism of neurologic tissue in the face of an already asphyxiated neural tissue.

If intra-cardiac adrenalin is to be used, it should be used in minute doses of .05-.1 mgm.

Resuscitative equipment

1. First of all it should be the duty of the anesthetist to check all equipment prior to each use and see that it all works properly; Oxygen tanks, flowmeters, tubes, masks, etc. An endotracheal tray with proper Ayer tubes, laryngoscope (Miller preferably) and suction catheters, etc., should be available in every Delivery Room.

Positive-negative ventilators

2. The E. & J., the Emerson and the Handy Ventilators all are examples of resuscitation producing 22 cm H_2O positive and -12 negative pressure in closed systems. Negative pressure can cause pulmonary edema and also the face masks frequently do not provide a good seal.

The Kreiselman apparatus is also a very common piece of equipment but has several serious drawbacks.

Tank respirators are cumbersome and Rocker beds

are of no value in the presence of the unexpanded or atelectatic lungs.

Ambu bag with a relatively safe pressure of 40 cm of H_2O should be part of the armamentarium of a delivery room.

Hypothermia can produce deleterious results and in our opinion should never be used.

Hyperbaric Oxygen has shown promise but recent results are discouraging.

Intragastric Oxygen tried in 1950 has been proven to be quite harmful and should never be attempted; in fact, we believe all resuscitated infants should have a catheter passed into the stomach and mild suction applied for a brief period in order to deflate any gas or fluid which passed down the esophagus during the attempted post-pressure resuscitation.

In conclusion we advocate:

1. Prompt oxygenation and/or resuscitation of the depressed newborn.
2. A healthy knowledge of the techniques of resuscitation.
3. Familiarity with new equipment.
4. Never hesitate to resuscitate the depressed infant.

PHYSICIAN COOPERATION REQUESTED

The incidence of multiple myeloma in Maine appears to be disproportionately high. Thirty-four cases have been diagnosed during the last 21 months. The Research Department of the Maine Medical Center is interested in making a survey of the population of the State in regard to the overall incidence of multiple myeloma and Waldenström's macroglobulinemia.

We would greatly appreciate the following information and materials on patients with definite or strongly suspected diagnosis:

a) 10 cc serum or plasma
b) 100 cc urine, if possible (regardless of proteinuria)
c) name, address and age of patient
d) name and address of physician
e) brief clinical abstract

Patients who live within traveling distance of the Maine Medical Center can arrange to come directly to the laboratory for collecting specimens. (call – 775-5454, ext. 228)

Extensive studies will be performed on these samples at no charge. Data of interest will be sent directly to the patient's physician and collected data will be submitted to *The Journal of the Maine Medical Association* in article form.

PETER W. RAND, M.D.
Director
Cardiovascular Research Laboratory

ROBERT F. RITCHIE, M.D.
Director
Rheumatic Disease Laboratory



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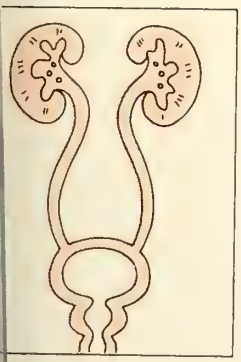
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h antibacterial activity against *E. coli* and other mmon urinary pathogens... A review of 153 cases of te G.U. infections reported in the literature shows that 90% responded to Gantanol (sulfamethoxazole), with over one-half of these patients showing excellent relief of symptoms.[1,2] Even in stubborn chronic G.U. infections, almost 60% of 450 patients improved on Gantanol (sulfamethoxazole), including many who had not responded to other antibacterials.[1-6]

Generally uncomplicated therapy enhances the favorable clinical results... Of the total 686 patients from the studies cited,[1-6] only three discontinued therapy because of side effects. Most of the side effects reported (approximately 3%) were mild and included nausea and/or vomiting, skin rash, dizziness, headache, gastritis, generalized uneasiness and itching.[1-6]

1. Peters, J. H.: *J. Urol.*, *87*:747, 1962. 2. Draper, J. W., *et al.*: *South. M. J.*, *57*:920, 1964. 3. Stewart, B. L.: *J. Urol.*, *87*:491, 1962. 4. Hagstrom, R. S.: *Rocky Mountain M. J.*, 59:(2), 37, 1962. 5. Arnold, J. H.: *Clin. Med.*, *71*:552, 1964. 6. Nelson, C. G.: *Colorado GP*, *3*:(3), 2, 1961.

re prescribing, please consult complete product rmation, a summary of which follows:

traindicated in sulfonamide-sensitive patients, nant females at term, premature infants, or new- infants during first three months of life.

nings: Use only after critical appraisal in patients liver damage, renal damage, urinary obstruction lood dyscrasias. If toxic or hypersensitivity reac- or blood dyscrasias occur, discontinue therapy. In mittent or prolonged therapy, blood counts and and kidney function tests should be performed.

autions: Observe usual sulfonamide therapy pre- ons, including maintenance of an adequate fluid e. Use with caution in patients with histories of gies and/or asthma. Patients with impaired renal ion should be followed closely since renal impair- may cause excessive drug accumulation. Occa- l failures may occur due to resistant microorgan- Not effective in virus or rickettsial infections.

rse Reactions: Headache, nausea, vomiting, urti- diarrhea, hepatitis, pancreatitis, blood dyscra- neuropathy, drug fever, skin rash, Stevens-Johnson syndrome, injection of the conjunctiva and sclera, petechiae, purpura, hematuria or crystalluria may occur, in which case the dosage should be decreased or the drug withdrawn.

Dosage: Adults—4 tablets initially, then 2 tablets b.i.d. or t.i.d. depending upon severity of infection. Children —1 tablet/20 lbs initially, followed by ½ tablet/20 lbs b.i.d.

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Flagyl seeks out the sites where trichomonads hide. Only a systemic agent can. Flagyl does, selectively and effectively.

Flagyl destroys trichomonads in the inner crypts, glands and cavities of the genitourinary tract in both women and men. Consequently, Flagyl is capable not only of curing trichomoniasis in women but also of preventing reinfection.

Correctly used, with due attention to repeat courses of treatment for resistant, deep-seated invasion and to the presumption of reinfection from male consorts, Flagyl has repeatedly produced up to 100 per cent cure in large series of patients.

When the diagnosis of trichomoniasis is positive, Flagyl is positive.

Dosage and Administration — In *women:* one 250-mg. oral tablet three times daily for ten days. A vaginal insert of 500 mg. is available for local therapy when desired. When used, one vaginal insert should be placed high in the vaginal vault each day for ten days; concurrently two oral tablets should be taken daily.
In *men* in whom trichomonads have been demonstrated: one 250-mg. oral tablet twice daily for ten days.

Contraindications — Pregnancy; disease of the central nervous system; evidence or history of blood dyscrasia.

Precaution—Complete blood cell counts should be made before, during and after therapy, especially if a second course is necessary.

Side Effects—Infrequent and minor side effects include nausea, metallic taste, furry tongue and headache. Other effects, all reported in an incidence of less than 1 per cent, are diarrhea, dizziness, vaginal dryness and burning, dry mouth, rash, urticaria, gastritis, drowsiness, insomnia, pruritus, sore tongue, darkened urine, anorexia, vomiting, epigastric distress, dysuria, depression, vertigo, incoordination, ataxia, abdominal cramping, constipation, stomatitis, numbness of an extremity, joint pains, confusion, irritability, weakness, flushing, cystitis, pelvic pressure, dyspareunia, fever, polyuria, incontinence, decreased libido, nasal congestion, proctitis and pyuria. Elimination of trichomonads may aggravate candidiasis.

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Did Dorothy Larson show you her ankles in private? Now she shows them in public.

Your office examination would have confirmed that Mrs. Larson was up to her knees in edema. Her heart was beginning to fail. And her ankles had disappeared under an inch of salty water.

Along with digitalis, you might have prescribed Hygroton. To get rid of the edema. And to keep it from coming back. And you prescribe Hygroton the same way you usually prescribe digitalis: just once a day.

Tablet for tablet, Hygroton is just about the most effective diuretic going. And it costs a fraction of what Mrs. Larson would have to spend for equivalent therapy with short-acting diuretics.

In fact, Hygroton is an awfully nice way to treat the Mrs. Larsons in your practice. Just tell them you can get their ankles back at half price.



Indications: Hypertension and many types of edema involving retention of salt and water.
Contraindications: Hypersensitivity and most cases of severe renal or hepatic disease.

Warning: With administration of enteric-coated potassium supplements, the possibility of small bowel lesions should be kept in mind.
Precautions: Reduce dosage of concomitant antihypertensive agents by at least one-half. Discontinue if th BUN rises or liver dysfunction is aggravated. Electro imbalance and potassium depletion may occur; take special care in cirrhosis or severe ischemic heart dis



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tients receiving corticosteroids, ACTH, or digi-
S restriction is not recommended.
Effects: Dizziness, weakness, nausea, vomiting,
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Availability: Tablets of 100 mg.
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Because it gets her *out* in public in the first place. At 43, Mrs. Larson worries about appearances and swollen ankles don't help.

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See preceding pages for brief summary of prescribing information.



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Maine Medical Association

Program-in-Brief—114th Annual Session

The Samoset — Rockland, Maine

Sunday — Monday — Tuesday

June 11, 12, 13, 1967

Sunday, June 11

9:30 A.M. First Meeting of the House of Delegates
Presentation of the A. H. Robins' Physician Award for Community Service

12:30 P.M. Luncheon

3:00 P.M. Second Meeting of the House of Delegates

6:30 P.M. Dinner
Speaker: To be announced

Monday, June 12

9:00 A.M. to 12:00 NOON

9:00 A.M. **Film – The Underweight Newborn**
Discussion by PHILIP G. GOOD, M.D., Pediatrician, Portland

9:30 A.M. **The Overweight Adult**
DANIEL D. FEDERMAN, M.D., Assistant Dean, Harvard Medical School and Chief, Endocrine Unit, Massachusetts General Hospital, Boston, Massachusetts

10:30 A.M. Subject to be announced
ROBERT J. BAKER, M.D., Associate Director, Division of Surgery, Cook County Hospital and Clinical Professor of Surgery, The University of Illinois College of Medicine, Chicago, Illinois

12:00 NOON to 2:00 P.M. Luncheon

1:30 to 4:00 P.M.
Scientific Program Sponsored by the Maine Chapter, American College of Surgeons and the Maine Trauma Committee

1:30 P.M. Business Meeting, Maine Chapter, American College of Surgeons

1:45 P.M. Subject to be announced
JOHN F. BURKE, M.D., Massachusetts General Hospital, Boston, Massachusetts

2:45 P.M. **Symposium – Thermal Trauma: New Methods in Management**

Speakers:
ROBERT J. BAKER, M.D., Chicago, Illinois
JOHN F. BURKE, M.D., Boston, Massachusetts
WILLIAM R. MACAUSLAND, JR., M.D., Boston, Massachusetts

4:00 P.M. **General Assembly**
Election of President-elect

6:30 P.M. **Annual Banquet**
Speaker: WILLIAM B. BEAN, M.D., Editor-in-Chief, *Current Medical Digest* and Professor of Medicine and Head of the Department of Internal Medicine, University Hospitals, The University of Iowa, Iowa City, Iowa
Subject: To be announced

Honorary Awards

Tuesday, June 13

9:15 A.M. to 12:00 NOON

9:15 A.M. **Practice Today**
Panel – How We Do It
Moderator: GEORGE J. ROBERTSON, M.D., Medical Director, Bingham Associates Fund and Senior Physician in Internal Medicine, Tufts-New England Medical Center, Boston, Massachusetts
Panelists: To be announced

10:30 A.M. **Practice Tomorrow**
Mechanization of Medical Practice
DAVID C. MARSHALL, M.D., Medical Director, Sanders Associates, Inc., Nashua, New Hampshire

Private Practice in the Planned Medeconomy
MR. LEWIS A. MILLER, Editor, *Patient Care*, Stamford, Connecticut

12:00 NOON to 2:00 P.M. Luncheon

2:00 to 4:00 P.M.
Program Sponsored by the Maine Medico-Legal Society
Program to be announced

6:30 P.M. Lobster Bake

SPECIALTY GROUP MEETINGS

Monday, June 12

12:30 P.M. Section in Ophthalmology of the M.M.A.

Luncheon Meeting

Ocular Cryosurgery

HARVEY A. LINCOFF, M.D., Assistant Clinical Professor of Ophthalmology, The New York Hospital-Cornell Medical Center, New York, New York

2:00 to 4:00 P.M.

Maine Society of Clinical Hypnosis

The Exploration Under Hypnosis of a Dual Amnesia Connected with the Sighting of an Unidentified Flying Object

BENJAMIN SIMON, M.D., Assistant Clinic Professor of Psychiatry, Tufts University School of Medicine, Boston, Massachusetts

Maine Society of Anesthesiology

The Anesthesiologists Viewpoint of Acute Cardio-Respiratory Problems

BENJAMIN E. ETSTEN, M.D., Professor of Anesthesia and Anesthetist-in-Chief, Tufts University School of Medicine, New England Medical Center Hospitals, Boston, Massachusetts

Maine Society of Internal Medicine and the Maine Thoracic Society

Tuesday, June 13

10:00 A.M. Maine Medico-Legal Society

Business Meeting

12:30 P.M. Maine Radiological Society

Luncheon Meeting

Visual Problems in Roentgen Interpretation

WILLIAM J. TUDDENHAM, M.D., Director, Department of Radiology, Pennsylvania Hospital, Benjamin Franklin Clinic, Philadelphia, Pennsylvania and formerly Professor of Radiology, Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania

2:00 to 4:00 P.M.

Ear, Nose and Throat Group

Three Dimensional Surgical Anatomy of the Temporal Bone

VALDEMAR M. JORDAN, M.D., Clinical Professor of Otology, Western Reserve University, Cleveland, Ohio

SPECIAL NOTICES

Sponsors

The speakers for the scientific programs are supported in part by grants from Merck Sharp & Dohme Postgraduate Program and Eli Lilly and Company State Medical Convention Program.

Election of President-elect

The election of a President-elect will take place at the General Assembly, June 12 at 4:00 p.m.

House of Delegates

Sunday, June 11 – 9:30 a.m. and 3:00 p.m.

Included in the Order of Business for the meetings of the House of Delegates will be final action on the Budget for 1968, Standing and Special Committee Reports, and the Nominating Committee Report.

Election of Councilors

Election of Councilors for the following Districts will take place at the Second Meeting of the House of Delegates on Sunday, June 11 at 3:00 p.m.

Fifth District – Hancock and Washington

Sixth District – Aroostook, Penobscot and Piscataquis

Golf Tournament

Daniel R. Shields, M.D., Lewiston, Chairman



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COMMISSIONER

State Of Maine

Department of Health and Welfare

Rabies - 1967

CHARLES H. OKEY, Ph.D.*

The rabies situation in Maine was summarized last in these pages in August, 1964, following the largest outbreak experienced in 30 years. Changes in the distribution of the disease have occurred since then. Implications of these changes, control efforts by state agencies and practical suggestions related to rabies are the bases of this article.

After more than two decades of quiescence, rabies was observed in northwestern and central Maine in 1962 and 1963 with the identification of the virus in 3 foxes and a cat. In 1964, 30 animals were identified by laboratory testing to have rabies. These included 20 foxes, 4 bats, a raccoon, 3 skunks and 2 cows. This was the first time rabid bats had been found in the state. Although the outbreak, in larger animals, centered around Rangeley, the bats were found in southwestern and central Maine. Nineteen hundred and sixty-five was a relatively quiet year with 3 rabid foxes in Wilton and Jay and a rabid bat in Fairfield. A total of 27 rabid animals were identified in 1966. It is significant that only 1 of these, a fox, was found in western Maine. The majority were from northeastern Aroostook County and 2 were from north central Maine. The majority of these animals were foxes. Three cows, 1 skunk, 2 cats and a dog complete the list. These cases were part of a generalized outbreak involving Quebec, just north of the state and New Brunswick to the east, in that they reported cases at about the same time they were found in Maine. By mid-April of 1967 an additional 7 rabid animals had been identified, with the following distribution: 5 foxes, 1 cat, and 1 raccoon. They were distributed in southern Aroostook County and western Maine.

From the distribution observed this year, it is quite likely that a considerable number of rabid animals will be identified during the coming months. State agencies are readying control programs at the present time in much the same fashion they were conducted in previous years. The Department of Agriculture will intensify its efforts to immunize all dogs and cats in the rabies areas, plus a zone around these areas. The Department of Inland Fisheries and Game will carry out efforts to reduce the fox population in whom rabies occurs more frequently than in other species.

This Department's recommendations for the medical management of animal bites follow those of the World Health Organization. Copies of the recommendations are distributed to all practicing physicians to serve as a guide.

Vaccine and immune serum is available in the respective district health offices and in the hospitals in the areas involved. The vaccine is the duck embryo type and can be used without the probability of serious side effects as was observed with the nerve tissue preparations. An occasional person may show mild reactions, particularly if he is allergic to eggs. The immune serum is of equine origin and carries the hazard of anaphylactoid reaction or serum sickness, particularly in those over 20 years of age.

Laboratory diagnosis is carried out using the immunofluorescence (FA) method. This test has the highest sensitivity of any available procedure as it depends upon an antigen antibody reaction and does not require live virus for its reactivity. Mouse inoculation tests are carried out at the National Communicable Disease Center in Atlanta on all human exposure cases in which the FA test is negative. In a rare instance, the mouse inoculation test will be positive and the FA test negative. Influencing this type of outcome is the quality of the specimen itself. Animals in the early stage of the disease may yield a negative FA test because the virus has not yet invaded significant portions of the brain. This points up the desirability, if practical, of holding suspicious animals in order to let the disease progress if it is present. Also, tissue changes, if the specimen is not refrigerated, make the preparation of good quality smears for examination most difficult. Icing the specimen is the preferred method of preservation. Freezing is to be avoided unless it is the only means of cooling available.

Physicians are confronted frequently with the problem

Continued on Page 117

*Director, Public Health Laboratory.

In peptic ulcer... antacid therapy with a new benefit



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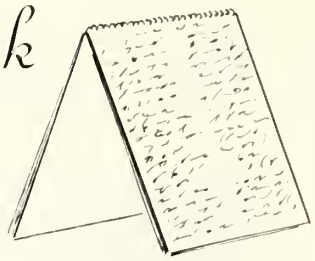
Composition: Each Mylanta chewable tablet or teaspoonful (5 ml.) of liquid contains: magnesium hydroxide, 200 mg.; aluminum hydroxide, dried gel, 200 mg.; simethicone, 20 mg. **Dosage:** one or two tablets, well chewed or allowed to dissolve in the mouth, or one or two teaspoonfuls of liquid to be taken between meals and at bedtime.

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From the Secretary's Notebook





Summary of Proceedings, Interim Meeting, M.M.A. House of Delegates, April 9, 1967 at Brunswick, Maine

The interim meeting of the Maine Medical Association House of Delegates was called to order at 2:15 P.M. by the President-elect, Paul S. Hill, Jr., M.D. and presided over by Robinson L. Bidwell, M.D., Speaker of the House. There was a total attendance of 64, including 35 delegates, 9 alternates, 13 members of the Council, the Secretary-Treasurer and 6 guests.

The financial statement of Income and Expenditures for fiscal year ending December 31, 1966 and budget proposed for fiscal year ending December 31, 1968 was presented by the Budget Committee Drs. John D. Denison and Edward K. Morse. *Final action on the budget proposed for 1968 will take place at the annual meeting of the House of Delegates on June 11 at The Samoset, Rockland, Maine.*

The President-elect announced the appointment of the following members to serve on the Nominating Committee: (First District) Thomas Anton, M.D., Biddeford, (Second District) Paul A. Brinkman, M.D., Farmington, (Third District) George W. Bostwick, M.D., Newcastle, (Fourth District) Valentine J. Moore, M.D., Waterville, (Fifth District) Bradley E. Brownlow, M.D., Blue Hill, (Sixth District) Charles D. McEvoy, Jr., M.D., Bangor – Chairman.

The report of the Nominating Committee shall be the first Order of Business at the Second Meeting of the House of Delegates on Sunday, June 11 at 3:00 P.M.

Resolutions

A proposal from the Androscoggin County Medical Association concerning a resolution relative to Privileged Communication Between the Physician and his Patient was referred to the Legislative Committee. (Kevin Hill, M.D., Waterville, Chairman.)

Also referred to this committee was a request from the Transfusion Committee (Joseph E. Porter, M.D., Chairman) that a resolution be drawn up on the relationships of blood usage to the implied warrantee of merchandise.

The Legislative Committee will present a report concerning these two resolutions at the meeting of the House of Delegates in June.

A resolution, which follows, relative to "prescribing drugs by generic names" presented for the Hancock County Medical Society by Bradley E. Brownlow, M.D. was approved, and the Executive Director instructed to see that it is forwarded to the proper individuals at the proper time.

Resolution Presented at the House of Delegates Meeting of the Maine Medical Association – April 9, 1967

WHEREAS, legislation is being considered to provide prescription drug benefits under state and federal medical programs and,

WHEREAS, efforts may be made to restrict prescriptions by physicians to generic name drugs and,

WHEREAS, pharmacologic action is affected by a number of physical and chemical factors (see list below) and,

WHEREAS, dosage forms may be diverse to meet varied circumstances such as age and size of patient and route of administration and,

WHEREAS, the quality and purity of the drug may rely on the source of supply and,

WHEREAS, the physician's order is not specific when drug products are prescribed generically

BE IT THEREFORE RESOLVED, that the physicians of the Maine Medical Association wish to go on record as being opposed to the restriction of the use of prescription drugs by generic name alone and reinstate their assertion that the greatest benefit from the use of drugs derives from medical discretion alone in the choice of medications.

List of Physical and Chemical Properties Influencing the Pharmacologic Action of a Drug

1. Size of crystal or particle.
2. Melting point.
3. Ph.
4. Viscosity.
5. Diluent.

6. Degree of hydration of crystal or addition of dehydrating substances to package.
7. Form of the agent – solution or salt.
8. Solubility.
9. Surface tension.
10. Quantity of active ingredients in combination.
11. Purity of ingredients.
12. Vehicle or inactive ingredients.
13. Compatibility and stability.
14. Enteric coating.
15. Disintegration time.

There was no action "at this time" on the following resolution presented by the Hancock County Society concerning a Maternal-Child Health Program.

Resolution Adopted by Hancock County Medical Society

"Whereas the Maternal-Child Health Program currently operating in Washington and Hancock Counties is ill-conceived, ill-planned and overly expensive:

Be it therefore resolved that the Hancock County Medical Society goes on record as being opposed to the program and suggests that the State of Maine, Department of Health and Welfare return the allocated funds to the Children's Bureau until such time as a program satisfactory to the majority of physicians is presented.

Be it further resolved that a copy of this resolution should be sent to Dr. Dean Fisher, Commissioner of Health and Welfare and to Mrs. Ottenberg, Director of Children's Bureau, Department of Health and Welfare, Washington, D. C."

Associated Hospital Service proposed increase in M.M.A. Group Insurance rates was discussed and the Executive Director instructed to "work for broader coverage," i.e., total coverage for semi-private room or the same amount toward cost of a private room.

Medical-Legal Co-operation Agreement Between Maine State Bar Association and Maine Medical Association. It was agreed that the Executive Director consult with our attorney, Mr. O'Connor, relative to this agreement and that it be submitted for further discussion at the June meeting.

A report submitted by Melvin Bacon, M.D., Chairman of the Diabetes Committee, follows:

Preliminary Report on the Diabetes Detection and Education Drive in Maine for 1966

The yearly Diabetes Detection and Education and Diabetes Week Observation in Maine is growing in magnitude and scope each year. It is definitely reaching more people who are becoming increasingly aware of Diabetes.

This year, as in the past, this program was a combined effort of the Maine Medical Association through its physician members, the Bureau of Health and Welfare, and the Maine Pharmaceutical Association. A physician was selected as Chairman of the Diabetes Committee for each County Medical Society in the State who conducted the Drive as he deemed best for his County with assistance from the above-mentioned groups. Newspapers, Television, both commercial and educational, and Radio Stations were utilized. A one-minute film short with well-known personalities featured was sent to each TV Station in the State for their use. Theaters showed film shorts, also. Hundreds of posters and thousands of pamphlets were distributed all over the State. Industries, hospitals, schools, drug stores, private physicians and businesses, State and Service installations participated in checking individuals for Diabetes. In all 175,000 to 200,000 were tested but the results are not final yet.

In York County, it appears from preliminary results, that we had the most successful endeavor ever. Here upwards of 20,000 individuals out of a population of 93,000 were checked for glycosuria.

An interesting program in one of our towns was carried out and I believe worthy of mention. The Health Council, under the guidance of the Town Physician and an R.N. as Chairman, distributed about 450 test kits to each family in town. Each kit included a Diabetes pamphlet, instructions for checking urines for glycosuria and a piece of Testape. The number of strips enclosed was dependent on the size of the family and varied from 1 strip to 11 or 12. The whole town was covered and the families were asked to contact the Chairman of this group if any change in color of the Testape was noted. Out of a population of approximately 1200 people two positives were reported. In addition, similar test kits were distributed to about 75 people who worked at the County Courthouse with no positives reported. Similarly, 20 inmates of the County Jail were tested with negative results. One hundred twenty-nine school children were also checked but no positives were found. However, in a group of 129 faculty members and students at the parochial school in this town, two positives with Clinitest were found amongst the faculty members. It was interesting to note that these same two men have been positives for the past 3 or 4 years. This program generated a lot of interest for the Chairman of the Health Council, who is an R.N., and received many phone calls and inquiries concerning Diabetes.

In other towns similar kits were placed in the Post Office boxes and its box holder asked to report any change in color to the Chairman of the local Diabetes Committee. In other towns and cities, where physician members of the York County Medical Society were located, a Chairman was selected and he carried on the program. In areas where there were no physicians, Health Councils and Public Health Nurses carried on the program. In addition we held an "Institute on Diabetes for the Nurses of York County."

The assistance of various groups in the State Drive was indispensible. In conclusion, I want to thank all the members of the Maine Medical Association, the Bureau of Health & Welfare, Daniel F. Hanley, M.D. and his staff, Maine Pharmaceutical Association and its Chairman, Erland Lowell, the various Health Councils, nurses, hospitals, members of the laity and all others who so unselfishly gave of their time to make this Diabetes Drive in Maine so successful an endeavor.



Grant to M.M.E.F. is presented to Paul S. Hill, Jr., M.D., M.M.A. President-elect, by Mr. Reginald Parker, Treasurer, Maine Cancer Society while Asa C. Adams, M.D., M.M.A. Council Chairman looks on.

The President-elect, Paul S. Hill, Jr., M.D., announced the presentation of a $2,000 grant to the Maine Medical Education Foundation from the American Cancer Society, Maine Division, Inc. This presentation was made by the Maine Division Treasurer, Mr. Reginald Parker, at the meeting of the Council which preceded the Interim Meeting of the House of Delegates.

A brief report concerning the Maine Medical Education Foundation was presented and the delegates reminded that it will be necessary to vote again in June for continuation of this assessment.

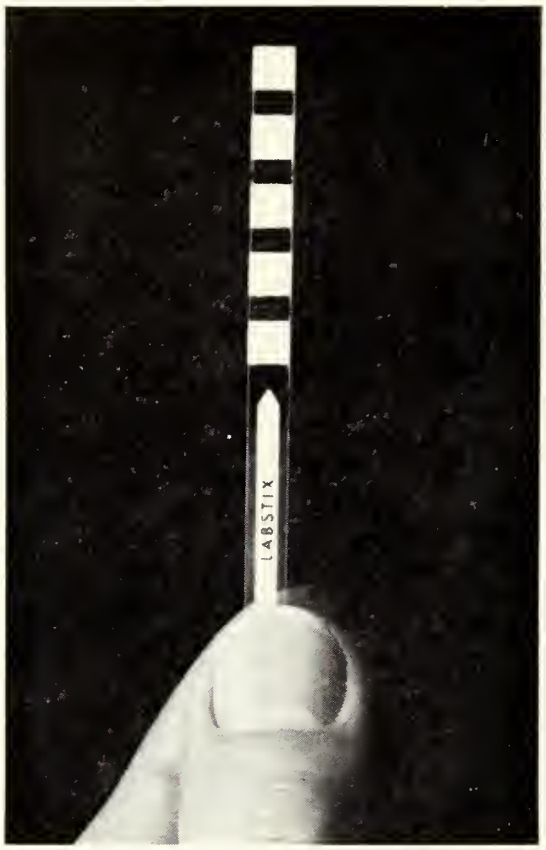
Carl E. Richards, M.D. stated that he feels that a Committee on National Legislation is needed and the President, Dr. Sullivan, has appointed the following members to serve in this capacity: Carl E. Richards, M.D. – Chairman, Charles D. McEvoy, Jr., M.D. and John D. Denison, M.D.

Mr. Maurice A. Kramer, AMA Field Representative, urged the members to express their personal views on medical legislation to our congressmen. He also urged members to read the April 10 issue of the AMA News which will contain pertinent information concerning medical legislation.

Paul A. Jones, Jr., M.D. called attention to a Conference on "Marital and Pre-marital Counseling" sponsored by The State of Maine Committee on Education for Marriage Counseling. (This was held at the Sheraton-Eastland Hotel, Portland, Maine on May 5, 1967.)

Copies of this program were sent to members of the Council, and to County Presidents and Secretaries.

The members of the Council were reminded that election of Councilors for the following Districts will take place at the Second Meeting of the House of Delegates



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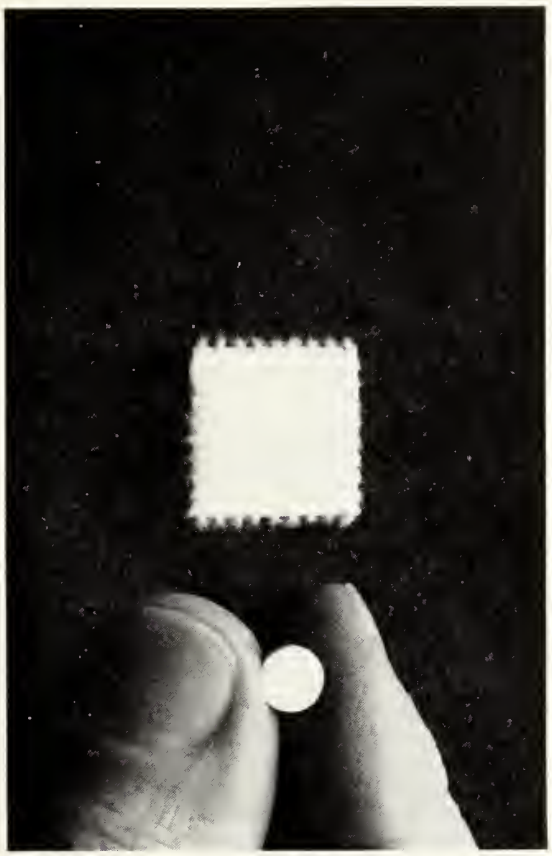
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on Sunday, June 11 at 3:00 P.M. – Fifth District (Hancock, Washington), Sixth District (Aroostook, Penobscot, Piscataquis).

In accordance with the M.M.A. Bylaws, "Nominations for members of the Council for any District where there is a vacancy shall be made by a *caucus of the members of the House of Delegates of that District.* Each candidate for Councilor must be a resident of the District for which he is nominated."

The Delegate to the American Medical Association, Paul H. Pfeiffer, M.D., called attention to his report which was published in the February issue of The Journal, page 46; Niles L. Perkins, M.D., Director, Bureau of Medical Care, State of Maine Department of Health & Welfare, discussed briefly the duties of his department, and there was some discussion relative to medical examiners and the proposed appointment of a Chief Medical Examiner for the State.

Adjournment at 4:50 P.M.

M.M.A. COUNCIL

At a meeting of the M.M.A. Council, preceding the House of Delegates, Dr. Sullivan was instructed to appoint a special Committee on Malpractice Insurance coverage to investigate the possibility of broader coverage under malpractice insurance contracts. This committee consists of – John P. Dow, M.D. – Chairman, George W. Bostwick, M.D. and Russell A. Morissette, M.D.

(A copy of this summary has been sent to the President, Secretary, Delegates and Alternates of each County Medical Society, to the Officers and Councilors of the Maine Medical Association and will be sent to any member of the M.M.A. on request.)

DEPARTMENT OF HEALTH AND WELFARE

Continued from Page 112

of shipping the specimen to the laboratory. The district health officer in Caribou has developed a means of transportation via bus which has served quite well for the past year. In other areas, the local game warden or town health officer can be of assistance. It should be kept in mind that, except for very small animals, only the head should be forwarded to the laboratory.

DATES TO REMEMBER . . .

M.M.A. ANNUAL SESSION

JUNE 11, 12, 13, 1967

The Samoset, Rockland

Maine Heart Association Notes

116 State Street, Augusta, Maine

Myocardial Infarction In Young Men

Coronary atherosclerosis is the leading single cause of death in the United States . . . It is also the leading cause of death from disease among active-duty personnel of the United States Army . . . The average of separation for disability from this disease in the Army is 44 years; the median age of death among those dying on active duty is 43 years.

. . . The vital factors to determine are those which predispose young male adults to myocardial infarction . . . The majority of patients who die of coronary atherosclerosis die before they reach a physician. . . . These facts clearly indicate that the only successful approach to this medical problem must be a preventive one.

This study was designed to identify further risk factors associated with the development of myocardial infarction in young male adults. . . .

Numerous studies have indicated elevated serum cholesterol as an extremely important risk factor in the genesis of coronary atherosclerosis in young individuals. Our study fully confirms this association and suggests that total serum lipids correlate almost as well with early atherosclerosis. . . .

. . . It (obesity) was one of the most striking factors in this study. Sixty-five percent of the patients in the infarct group were obese versus 38 percent of the controls (20 percent or more above standard weight); . . .

The increased family history of coronary artery disease undoubtedly reflects predisposing enzymatic genetic factors; however, this may not be as significant as it appears since family patterns of eating and of obesity may also be involved.

. . . studies have emphasized this importance of hypertension as a significant risk factor . . . Our study supports this concept. . . .

This study also confirmed the relation between cigarette smoking and coronary atherosclerosis. . . .

. . . The coronary group . . . tended to consume more than average amounts of foods high in saturated fats but demonstrated an even more significant aversion to foods high in polyunsaturated fats than did the control group.

. . . The most striking correlation . . . was the elevated serum cholesterol, elevated total serum lipids, obesity and a family history of coronary artery disease. Other factors associated to a statistically significant degree with myocardial infarction were hypertension, short stature, cigarette smoking, consumption of saturated fats, low intake of unsaturated fats, emotional tension, Caucasian race and family history of hypertension.

Pooling of data from several studies such as this is urgently needed to firmly establish the major risk factors . . . and to eliminate many factors that have been proposed on the basis of inadequate or inconclusive evidence.

Submitted by Jacob B. Dana, M.D., Maine Heart Association

Reference — The American Journal of Cardiology, Walker, W. J., et al, Vol. 19, pages 339-343, 1967

AMERICAN CANCER SOCIETY - MAINE DIVISION, INC.

Brunswick, Maine

Leukemia Versus Virus

PHILADELPHIA, PA. — Scientists at Albert Einstein Medical Center have discovered an important clue to the success of leukemic viruses: the viruses rapidly destroy the body's main defenses against infections.

This was contained in a report issued recently by the American Cancer Society on work by Dr. Herman Friedman, head of the Department of Microbiology, Dr. Walter Ceglowski and Dr. Edward O'Donnell.

Leukemic patients often die because their systems are unable to overcome a common cold, a minor flu or some other usually slight infection. Something about leukemia prevents the patients from producing antibodies against invading viruses and microbes.

The Friedman group showed that two kinds of viruses which cause leukemia in mice attack lymphocytes, or lymph cells, which manufacture antibodies. When they added the viruses to a culture of mouse lymphocytes and other cells growing in glass dishes, the viruses promptly attacked and destroyed the antibody-producing lymphocytes.

While several animal leukemias are known to be caused by viruses, there is still no proof that human leukemia is virus-caused. More and more, however, scientists incline to the belief that the human disease may be due to viruses. The observations made at Albert Einstein could explain the fatal complications of human disease as well as they do virus-caused mouse leukemia.

The scientists first injected sheep red blood cells into normal and leukemic mice. This sensitized the mice against the sheep red cells; that is, the mouse lymphocytes were stimulated to produce antibodies against the red cells.

When red cells were injected a second time into the mice, the antibodies immediately destroyed them. And even when the sensitized lymphocytes were removed and grown in glassware, they produced antibodies and destroyed the red cells. By counting the number of lymph cells which formed plaques of antibody-destroyed red cells, and by staining with a dye which makes antibodies fluoresce, the scientists could trace the number of lymphocytes which produced antibodies in mice immunized with red cells.

The tests showed that sensitized lymphocytes from animals which had been immunized with red cells and infected by either the Friend virus or Rauscher virus, both of which cause leukemia in mice, had a markedly diminished ability to attack sheep red cells. The effect was extremely rapid; shortly after inoculation, the virus began destroying the defensive capability of the lymphocytes. The number of lymphocytes which could produce antibodies decreased substantially long before the animals showed any symptom of leukemia.

Other recent work with mice immunized with bacterial vaccines, rather than red blood cells, have shown that there is also a rapid diminution of antibody-producing cells in the bacteria in mice infected with the leukemia viruses.

American Cancer Society News Service Release



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Indications: Tuinal, comprised of equal parts of Seconal® Sodium (sodium secobarbital, Lilly) and Amytal® Sodium (sodium amobarbital, Lilly), is indicated for prompt and moderately long-acting hypnosis. Not suitable for continuous daytime sedation.

Contraindications: Barbiturates should not be administered to anyone with a history of porphyria, nor should they be given in the presence of uncontrolled pain, because excitement may result.

Warning: May be habit-forming.

Precautions: Tuinal should be used cautiously in patients with decreased liver function, since prolongation of effect may occur.

Adverse Reactions: Idiosyncrasy, such as excitement, hangover, or pain, may appear. Hypersensitivity reactions occur in some patients, especially in those with asthma, urticaria, or angioneurotic edema.



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The Arthritis Foundation looks forward to rapid growth with increasing opportunity for physicians to participate in the arthritis movement. For further information about The Arthritis Foundation and its programs write to the Foundation chapter in your community or to the Medical Department, Box 2525, New York, N.Y. 10001.

Floyd B. Odlum
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William S. Clark, M.D.
President

Donald F. Hill, M.D.
President of the American
Rheumatism Association Section

William E. Reynolds, M.D.
Medical Director

Necrologies

Gilmore W. Soule, M.D.
1908-1967

Gilmore W. Soule, M.D., 58, of Rockland, Maine died on March 30, 1967. He was born in Woolwich, Maine on July 14, 1908, the son of Alfred and Mary Hilton Soule.

Dr. Soule graduated from Cony High School in Augusta in 1926, Bowdoin College in 1930 and received his medical degree from Harvard Medical School in 1935. He interned at the Rhode Island Hospital in Providence from 1936 to 1938, and located in Rockland where he practiced until his death.

He was a member of the Knox County Medical Society, the Maine Medical Association, the American Medical Association, the New England Medical Society and the American Group Psychotherapy, Inc. Dr. Soule was also a member of St. Peter's Church, and was a delegate from the Maine Diocese to the general conventions of the Episcopal Church in San Francisco and Boston.

Surviving are his widow, Mrs. Alice Leigh Soule of Rockland; a daughter, Mrs. Mary Ingalls of Waterville; a son, Daniel W. Soule of Orono; two sisters, Mrs. Robert Bateman of Wellesley, Massachusetts and Mrs. R. W. Maher of Woolwich; two brothers, William H. of Portland and David B. of Woolwich; and four grandchildren.

Albert J. Bernard, M.D.
1907-1966

Albert J. Bernard, M.D., 59, of Skowhegan, Maine died on December 23, 1966 in St. Thomas, U.S. Virgin Islands. He was born in Auburn, Maine on October 2, 1907, the son of Albert J. and Marie Thibeault Bernard.

Dr. Bernard graduated from Bates College in 1932 and received his medical degree from Tufts University School of Medicine in 1936. He interned at the Maine General Hospital in Portland and served a residency in Gynecology and Obstetrics at the Carney Hospital in Boston. He began practice in Skowhegan in March 1939.

He was a member of the Somerset County Medical Society, the Maine Medical Association, the American Medical Association, the International College of Surgeons and the American Society of Abdominal Surgeons. He was also instrumental in founding Fairview Hospital in Skowhegan and served as a director for a number of years.

At the time of his death Dr. Bernard was living in the Virgin Islands, and last June had started working for the Public Health Service of the Virgin Islands.

Surviving are his widow, Ruth, daughter of the late Daniel A. Barrell, M.D. of Auburn; three daughters, Mrs. Errol G. Jacobi of Kansas City, Kansas, Mrs. Rizwan Nomani, now living in England and Elizabeth of Skowhegan; and a son, Albert Jr. of Hartford, Connecticut.

County Society Notes

WASHINGTON

Meetings of the Washington County Medical Society were held at the Dennys River Inn in Dennysville, Maine on February 28, 1967 and March 27, 1967.

At the first meeting there were six members present and at the second there were seven. Both meetings were attended by Council member James C. Bates, M.D. of Eastport, Maine.

The main discussion at both meetings was principally on Medic-Aid or Title 19.

The Society discussed the pros and cons of setting up Maternity and Pediatric Clinics in the county. There was considerable opposition from all members of the original plan as proposed. The Society felt, however, if reasonable compromises could be made that a working plan could be set up that would be satisfactory to all parties involved. John Kazutow, M.D. of Columbia Falls was appointed coordinator of the program.

Karl V. Larson, M.D., *Secretary*

ANDROSCOGGIN

A meeting of the Androscoggin County Medical Association was held at the Central Maine General Hospital in Lewiston, Maine on March 16, 1967.

The meeting was called to order by the Vice-president, Joseph J. Rando, M.D. with twenty-four members present.

A copy of the answer to Dr. George B. O'Connell's letter to Blue Cross and Blue Shield has been placed on the bulletin board of each hospital.

It was voted that a report on the status of fluoridation of drinking water be presented at the April meeting.

Dr. Rando introduced the speakers of the evening: Mr. Paul R. Buckley of Longley Associates of Lewiston and Mr. William D. Brownlie, consultant to the Council of New England State Medical Societies. Mr. Buckley outlined the history of the Keogh Bill and Mr. Brownlie dealt mostly with the N.E. physicians retirement fund and its three components.

Donald L. Anderson, M.D., *Secretary*

LINCOLN-SAGADAHOC

The Lincoln-Sagadahoc County Medical Society met at The Ledges in Wiscasset, Maine on March 21, 1967.

The meeting was called to order by the President, Charles E. Burden, M.D.

The bill on abortion was discussed but no official stand was taken by the Society.

Francis A. Winchenbach, M.D. was unanimously nominated as representative of the Health Insurance Committee of the Maine Medical Association.

A list of committees of the Maine Medical Association was circulated and members asked to volunteer for consideration by the Nominating Committee.

The guest speaker, Robert L. Ohler, M.D., President of the Kennebec County Medical Association, was introduced by Ralph C. Powell, M.D. Dr. Ohler outlined the organization and functions of the Intensive Coronary Care Unit, specifically as this unit is operated at the Veterans Administration Center in Togus.

GEORGE W. BOSTWICK, M.D., *Secretary*

New Members

ANDROSCOGGIN

Pim W. K. Ligthart, M.D., 14 Lisbon St., Lewiston 04240

KNOX

Henri Hardy, M.D., Dark Harbor, Islesboro 04848

News, Notes and Announcements

Six-Week Postgraduate Training Program in Neurology at the Lemuel Shattuck Hospital

A six-week, postgraduate training program in neurology for non-neurological, practicing physicians of the New England States is being offered at the Lemuel Shattuck Hospital in Boston. It is offered primarily for those now employed in Mental Hospitals, Chronic Disease Hospitals and Schools for Retarded Children and for physicians who may participate in Community Centers for Mental Health or Mental Retardation.

The Course is designed to serve as an effective introduction to clinical neurology, creating an interest in the neurological patient and his problems and making the physicians more competent and confident in their approach to diagnosis and management of neurological problems.

The trainees will have direct patient responsibility on the neurological unit. They will work up and present patients to the staff neurologists for discussion and under supervision will perform and interpret the simpler neurological diagnostic tests. They will assist in the performance of more complicated tests such as arteriography to learn the benefits and risks of these tests and when they should be requested. There will be teaching rounds and conferences in neurology, neuropathology, neuroradiology and physiotherapy. In addition there will be a series of coordinated lectures. Because practical experience is being emphasized and two-thirds of the time of the course is patient-centered, only six trainees can be accepted at one time.

The trainees will be practicing physicians usually with families and sometimes with on-going office expenses. Therefore a stipend of up to $200 a week has been provided.

The courses will be started on October 9 and January 2 and are partially sponsored by the Neurological and Sensory Disease Control Program, National Center for Chronic Disease Control, U.S. Public Health Service. For further information write to: William H. Timberlake, M.D., Chief of Neurology, Lemuel Shattuck Hospital, 170 Morton Street, Jamaica Plain, Massachusetts 02130.

Computerized Bibliographic Service Now Available To New England Medical Community

The Francis A. Countway Library of Medicine (the Boston Medical Library and Harvard Medical Library) is now ready to accept requests from members of the New England medical community for literature searches by computer – known in library circles as MEDLARS (Medical Literature Analysis and Retrieval System), according to Ralph T. Esterquest, Librarian.

Since May 1966 the Countway has been serving as the New England Regional Search Center of MEDLARS. The central office of MEDLARS is in the National Library of Medicine in Bethesda, Maryland. The Countway is one of five medical libraries in the country designated as a regional search center.

"Having come through a successful test period," Mr. Esterquest stated, "we feel confident that we can now deliver bibliographies of periodical articles with reasonable speed."

This is how MEDLARS works.

A physician wanting to read the latest information on angiosarcoma (for example) writes or calls MEDLARS REGIONAL SEARCH CENTER (NEW ENGLAND), Francis A. Countway Library of Medicine, 10 Shattuck Street, Boston, Mass. (Tel: 617-734-3300, Ext. 109). He describes his subject as precisely as he can. The Search Center "formulates" the question in accordance with the nomenclature of the MEDLARS system. It goes through the computer, and in due course a typed, tailormade bibliography of periodical articles is machine-produced and sent to the inquiring physician.

The store of literature to which the system has access to are the periodical articles that have been included in *Index Medicus* since January 1964. At present it takes from three to five weeks to deliver the product bibliography to the requesting individual. "It is anticipated that this time will be speeded up as we get practice and experience," Mr. Esterquest stated.

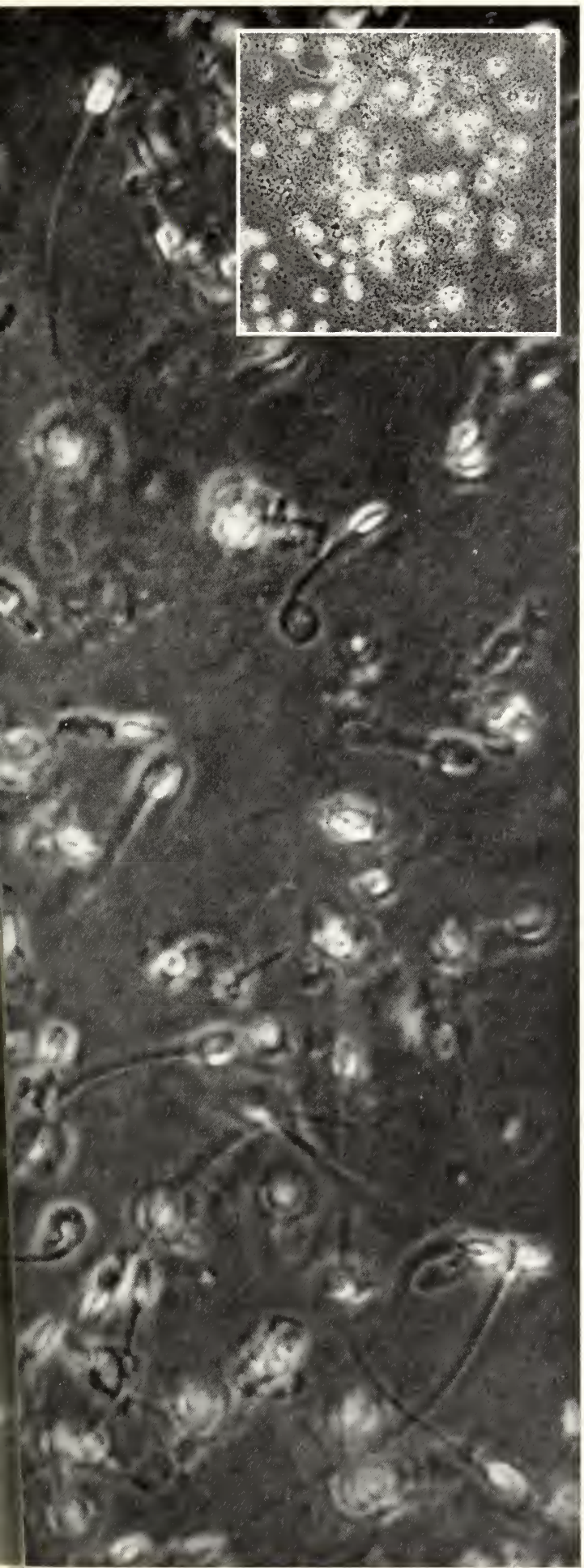
Any practicing physician in New England is eligible to request a search. There is no cost to the physician for this service.

Hypnosis Workshop

A workshop in the comprehensive application of hypnosis in therapy, basic and advanced, will be held at the State University College at Oswego, New York, July 13-16, 1967. The workshop is directed by Lawrence M. Staples, DMD, who has directed many similar workshops in the past. Frederick H. Ratzeburg, Ph.D., professor of psychology at the host college, will serve as coordinator. Among the noted speakers, panelists, and specialists are the following:

Leo Alexander, M.D.	Robert Pearson, M.D.
Donald B. Coulton, M.D.	Frederick H. Ratzeburg, Ph.D.
Milton E. Erickson, M.D.	Lawrence M. Staples, D.M.D.
William T. Heron, Ph.D.	Kay Thompson, D.D.S.
Lewis Jacobs, M.D.	T.E.A. von Dedenroth, M.D.

Oswego is located on the shores of Lake Ontario, and is ideally situated for summer holiday activities. Swimming, boating, horseback riding, tennis, and the parks of upper New York State are available. Registration for either the basic or advanced workshop is $90.00, with special rates for full time students, teachers, and interns. Registration is limited to dentists, physicians, and psychologists who are members of their national organizations. For more detailed information, write Dr. Frederick H. Ratzeburg, State University College, Oswego, New York 13126.



New view of an oral contraceptive at work

Although suppression of ovulation remains the primary mode of action of oral contraceptives, newer knowledge indicates that products like Norinyl-1 — which provide the combined action of both low-dosage progestogen and estrogen for the full treatment cycle — offer multiple contraceptive action that helps explain their unexcelled record of effectiveness. This report explores the secondary protective mechanisms against unwanted pregnancy offered by combined hormonal administration and the importance of the progestational agent in making such multiple contraceptive action possible.

Accumulating evidence has indicated that sparse, highly viscous cervical mucus has an adverse effect on the motility and survival of spermatozoa.

The estrogen-opposing progestational ingredient of Norinyl-1 (norethindrone 1 mg. with mestranol 0.05 mg.) reverses the usual midcycle picture of a thin, watery cervical mucus. The result — a built-in barrier that inhibits sperm from reaching the ovum should one be released. The inset in the adjoining photograph shows immobile spermatozoa as they appear in cervical mucus taken from a patient treated with Norinyl-1.

See last page for contraindications, precautions, side effects and dosage.

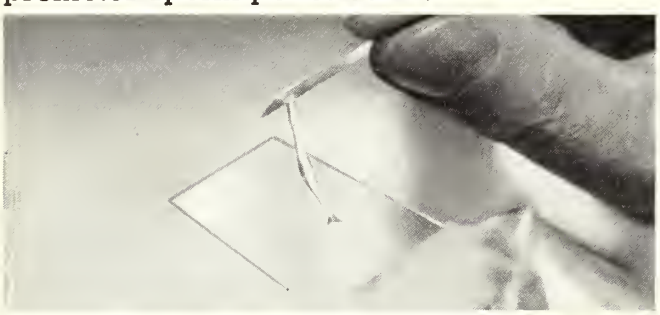
How the estrogen-opposing action of Norinyl-1 creates a hostile cervical mucus

Normally estrogen activity during the fertile midcycle stimulates the production of cervical mucus. The mucus at this time is profuse and watery—allowing maximum sperm motility and promoting penetration.
But what happens when Norinyl-1 is administered? Its potent progestogen, norethindrone, opposes estrogen stimulation of cervical mucus. Consequently, the amount of mucus decreases and its viscosity increases. This results in a sparse but thick mucus barrier that diminishes the vitality of the sperm and impairs its powers of penetration.

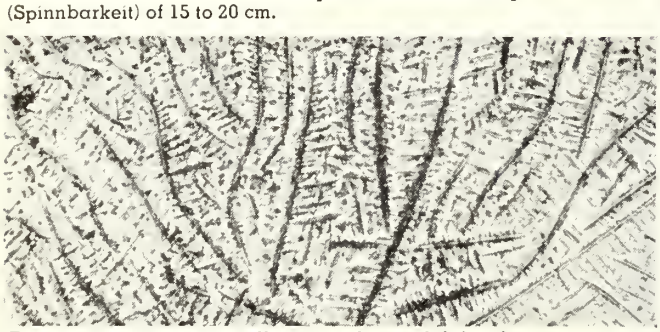
How hostile cervical mucus supports contraceptive action

The importance of these observations to the effectiveness of Norinyl-1 has been noted in a report on 89 patients taking this medication.* In all instances, cervical mucus obtained from cycle day 5 to cycle day 29 appeared scant and thick and exhibited little or no Spinnbarkeit. In the opinion of this investigator, the effect on cervical mucus may be sufficient to prevent conception. *Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965.

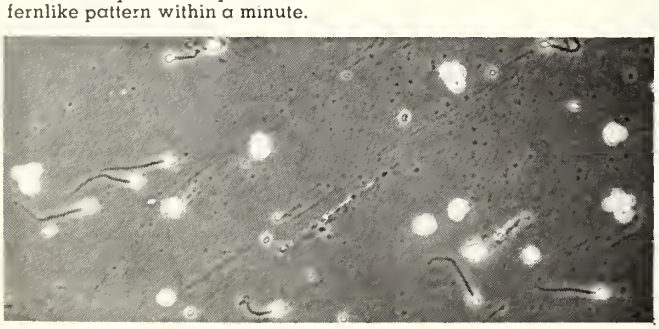
Normal cervical mucus at midcycle in untreated patient permits sperm motility... promotes sperm penetration.



Cervical mucus is thin and watery with a stretchability (Spinnbarkeit) of 15 to 20 cm.

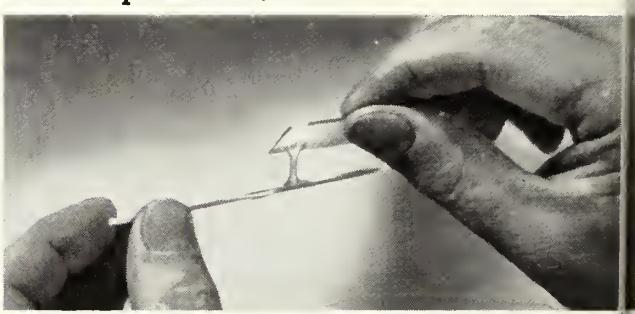


Thin, watery mucus crystallizes into this well-defined, fernlike pattern within a minute.

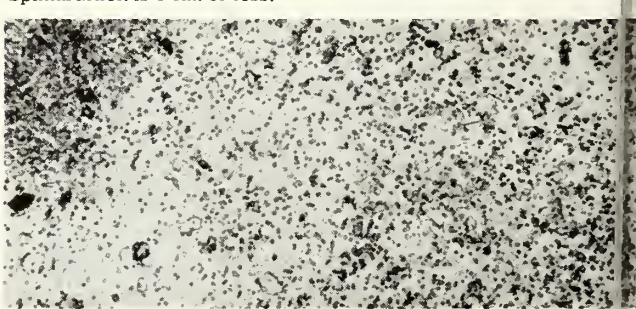


Spermatozoa appear healthy, are active and free moving.

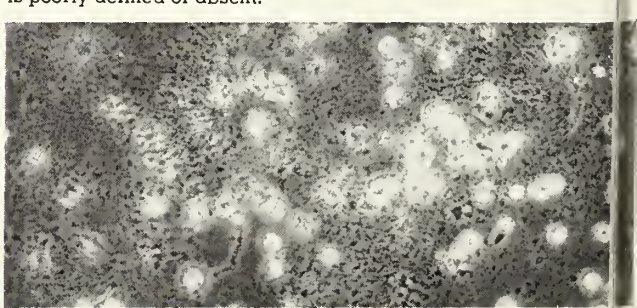
Hostile cervical mucus at midcycle produced by Norinyl-1 impairs sperm vitality... inhibits penetration.



Cervical mucus is scanty, thick and viscous. Spinnbarkeit is 1 cm. or less.



In thick, hostile cervical mucus the fern pattern is poorly defined or absent.

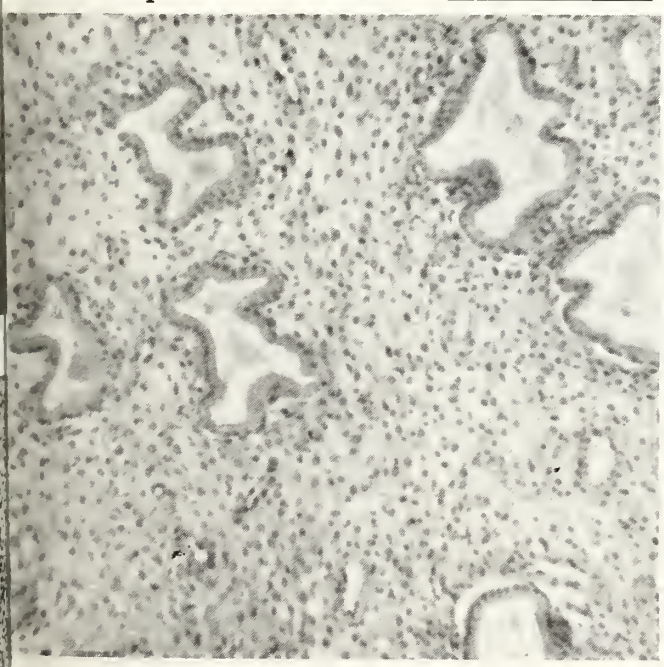


Immobile spermatozoa as they appear in cervical mucus taken from a patient treated with Norinyl-1.

An endometrium unreceptive to nidation– another supporting contraceptive action of Norinyl-1

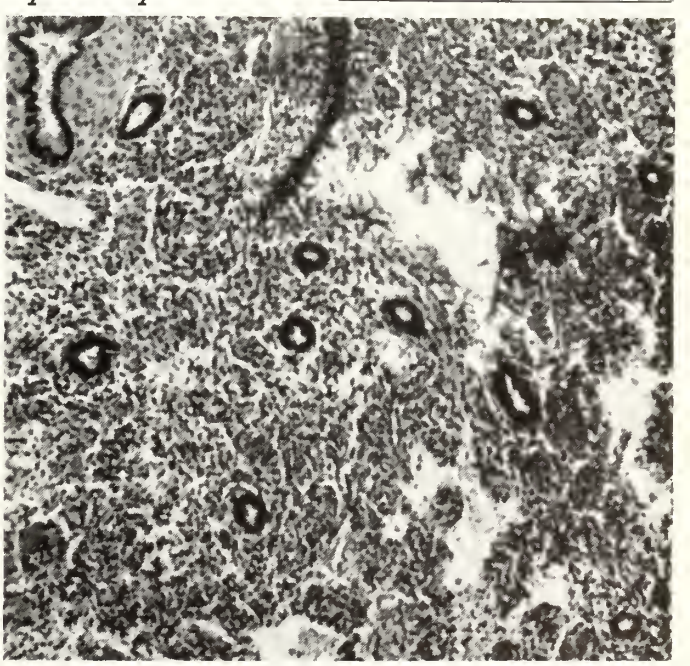
Let us suppose that an ovum is released—as occurs in an occasional, rare case—and somehow a sperm succeeds in penetrating the cervical mucus barrier? Should this come about, one additional action of Norinyl-1 may protect the patient from unwanted pregnancy—progestogen intake makes endometrial tissue unreceptive to implantation.

Endometrium of untreated patient



Normally the endometrium progresses through a proliferative phase stimulated by estrogen and a secretory phase stimulated by progesterone. During the secretory phase the endometrium is receptive to the fertilized ovum.

Unreceptive endometrium produced by Norinyl-1



When Norinyl-1 is administered its progestogen component—norethindrone—accelerates the secretory phase, suppressing glandular development. From day 11 on, secretory action is no longer present. The result is that during the latter half of the cycle the endometrium becomes unreceptive to egg implantation.

new Norinyl®-1 tablets

(norethindrone 1mg c mestranol 0.05mg)

ee last page for contraindications, precautions, side effects and dosage.

for multiple contraceptive action

effective fertility control
on half the previous dosage

maintains ratio
of the established
norethindrone/mestranol
combination

lower cost

new Norinyl®-1

(norethindrone 1mg. c̄ mestranol 0.05mg.) **tablets**

Reduction of oral contraceptive dosage to lowest effective levels hc become a well-accepted principle of conservative medical practic. In keeping with this view, Norinyl is now available in a new streng in which *both* norethindrone and mestranol are reduced 50 perce. Studies show that Norinyl-1 achieves fertility control with only 1.(mg. of combined progestogen and estrogen per tablet.

Norethindrone was first reported for use as a progestational agent human beings in 1955. Norethindrone 2 mg. with mestranol 0.1 mg., an oral contraceptive, is currently in use by over 2,000,000 wom. Clinical experience now establishes that Norinyl-1 also amply mee the criteria of reliability and safety.*

*Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965.

PRESCRIBING INFORMATION

Contraindications: 1. Patients with thrombophlebitis or with a history of thrombophlebitis or pulmonary embolism. 2. Liver dysfunction or disease. 3. Patients with known or suspected carcinoma of the breast or genital organs. 4. Undiagnosed vaginal bleeding.

Warnings: 1. Discontinue medication pending examination if there is sudden partial or complete loss of vision or if there is a sudden onset of proptosis, diplopia, or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn. 2. Since the safety of Norinyl-1 in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods, pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule, the possibility of pregnancy should be considered at the time of the first missed period. 3. Detectable amounts of the active ingredients in oral contraceptives have been identified in the milk of mothers receiving these drugs. The significance of this dose to the infant has not been determined.

Precautions: 1. The pretreatment physical examination should include special reference to breast and pelvic organs, as well as a Papanicolaou smear. 2. Endocrine and possibly liver function tests may be affected by treatment with Norinyl-1. Therefore, if such tests are abnormal in a patient taking Norinyl-1, it is recommended that they be repeated after the drug has been withdrawn for 2 months. 3. Under the influence of estrogen-progestogen preparations, preexisting uterine fibroids may increase in size. 4. Because these agents may cause some degree of fluid retention, conditions that may be influenced by this factor, such as epilepsy, migraine, asthma, cardiac, or renal dysfunction, require careful observation. 5. Although a cause and effect relationship has not been established, Norinyl-1 should be used with caution in patients with a history of cerebrovascular accident. 6. In relation to breakthrough bleeding, as in all cases of irregular bleeding *per vaginam*, nonfunctional causes should be borne in mind. In cases of undiagnosed vaginal bleeding, adequate diagnostic measures are indicated. 7. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. 8. Any possible influence of prolonged Norinyl-1 therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. 9. A decrease in glucose tolerance has been observed in a small percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving Norinyl-1 therapy. 10. Because of the occasional occurrence of thrombophlebitis and pulmonary embolism in patients taking oral contraceptives, the physician should be alert to the earliest manifestations of the disease. A cause and effect relationship has not been demonstrated. 11. Because of the effects of estrogens on epiphyseal closure, Norinyl-1 should be used judiciously in young patients in whom bone growth is not complete. 12. The age of the patient constitutes no absolute limiting factor, although treatment with Norinyl-1 may mask the onset of the climacteric. 13. The pathologist should be advised of Norinyl-1 therapy when relevant specimens are submitted.

Side Effects: The following adverse reactions have been observed with varying incidence in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms, breakthrough bleeding, spotting, change in menstrual flow, amenorrhea, edema, chloasma, breast changes (tenderness, enlargement and secretion), loss of scalp hair, change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately postpartum, cholestatic jaundice, erythema multiforme, erythema nodosum, hemorrhagic eruption, migraine, rash (allergic), itching, rise in blood pressure in susceptible individuals, mental depression.

The following occurrences have been observed in users of oral contraceptives. A cause and effect relationship has not been established: thrombophlebitis, pulmonary embolism, neurooocular lesions.

The following laboratory results may be altered by the use of oral contraceptives: i creased bromsulphalein retention and ot hepatic function tests, coagulation tests crease in prothrombin, factors VII, VIII, IX c X), thyroid function (increase in PBI and b nol extractable protein-bound iodine and crease in T^3 values), metapyrone test, pregn diol determination.

Other side effects reported to have occur in association with use of this drug are d ness, hirsutism, pains in legs, back, chest abdomen, dysuria, drowsiness, vaginal charge, libido increased and decreased, e tions, hypermenorrhea, hypomenorrl increased appetite, G.U. infections, varic veins, abdominal fullness, acne, heada nervousness, allergies, blurred vision, pair eyes, and itching in eyes. *For complete clin data, see package insert.*

Dosage and Administration: 1. One table Norinyl-1 is administered orally for 20 d beginning on day 5 of the menstrual c (Count day 1 of the cycle as the first da menstrual bleeding.) Repeat this dosage sc ule for each cycle. 2. If no menstrual pe occurs after a cycle of treatment (20 tablets which patient adhered to the schedule, the tient must be instructed to resume taking Norinyl-1 tablets 7 days after the previou day course was completed. For example, if last pill of a previous cycle had been take a Sunday, then a new cycle of treatment sh begin on the following Sunday. 3. In the partum woman, it is recommended that first cycle of treatment should begin on d of the first menstrual cycle. However, Nori should not be administered during lactatio

Availability: Norinyl-1 (norethindrone 1 with mestranol 0.05 mg.)—Dispensers of 20 60 and bottles of 250 tablets.

norethindrone — an original steroid from

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LABORATORIES INC., PALO ALTO, CALIF.

INFLAMMATION:
A cellular fight for life

A SYNTEX REPORT based on recently developed hypotheses about topical corticosteroids, including the cellular theories of inflammation by Thomas F. Dougherty, Ph.D., University of Utah.

You are looking at a fibroblast fighting for life. This cell—one of the most common found in connective tissue—has literally been poisoned by cytotoxins released from other cells that have ruptured. Soon, if the abnormal activity of this fibroblast does not cease, it, too, will rupture and die—one more casualty in the inflammatory wave of destruction precipitated by injury.

Until a short time ago no one had ever witnessed such a scene at the cellular level. Now, through advanced cinemicrographic techniques, it is possible to view and photograph the inflammatory process as produced experimentally in living animal tissue. This method permits new insight into the mechanism of inflammation and the role of corticosteroids in therapeutic management. Equally important, these techniques shed new light on factors that may make one corticosteroid more effective than another—factors that can be correlated with other chemical, biologic, and clinical parameters.

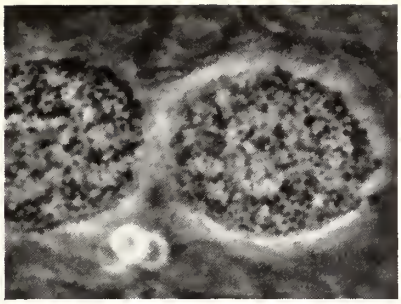


Visual evidence of how corticosteroids influence the inflammatory reaction

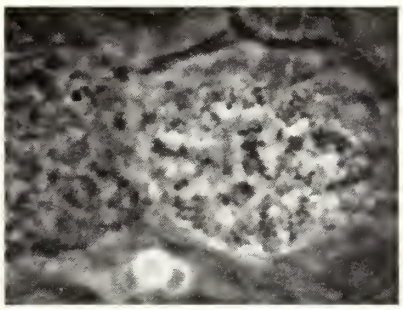
Working with phase-contrast cinemicrography on living animal tissue, Doctors Thomas F. Dougherty and David Berliner of the University of Utah College of Medicine have actually filmed cellular events that occur during the inflammatory reaction. This remarkable study* and additional work by these investigators, as well as by others, have established a new theoretical biologic basis for the antiinflammatory effect of the corticosteroids. (It must be noted that other theories, such as the lysosome or so-called "suicide bag" theory, have been postulated, although it is quite likely that there are more similarities than differences among the various theoretical models.)

The inflammatory wave of destruction

In this investigation an injurious injection of gelatin is used to set off an inflammatory reaction in living mouse tissue. What follows is a wave of destructive cellular activity that comprises the inflammatory response to injury. Mast cells (which contain heparin, serotonin and histamine) take up water, swell and rupture, releasing their contents, which are toxic outside the mast cell wall. These toxins, in turn, cause disintegration of other cells (such as fibroblasts) and the release of additional toxic material. Capillaries, too, take up water and leak unformed blood elements, causing edema. And polymorphonuclears, lymphocytes and perithelial cells invade the inflamed site. As a result of all these changes, the cellular environment reaches a state of turmoil.



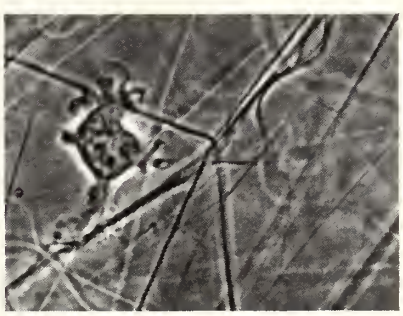
Phase-contrast microscopy showing mast cell before injury.



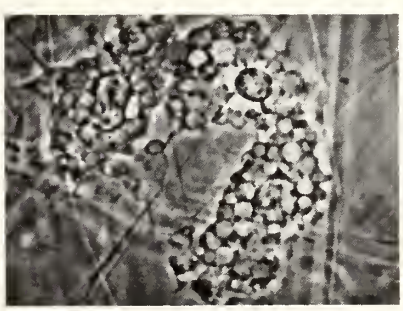
Mast cell (after injury) has broken up and released cytotoxins.

How corticosteroids change the picture

Corticosteroids appear to virtually stop the abnormal cellular activity that constitutes the inflammatory reaction. This permits the body's natural resources to clear up the inflamed area and repair the damaged tissue. This interpretation is supported by the fact that when the injurious gelatin solution is injected simultaneously with a corticosteroid —Synalar (fluocinolone acetonide)— the inflammatory pattern simply does not develop.



Fibroblast in high state of activity, much distorted.



Mast cells showing effects of corticosteroid action: cells are normal in size, shape and activity.



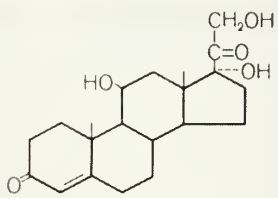
In summarizing his study Doctor Dougherty states: "...we also feel this work may explain why one corticosteroid helps a patient more rapidly and effectively than another. If it does, it is because one corticosteroid is the fastest, most effective inhibitor of the series of inflammatory events at the tissue level."

*A New View of Corticosteroid Action in Inflammatory Dermatoses, a film based on this study, is now available from your Syntex representative.

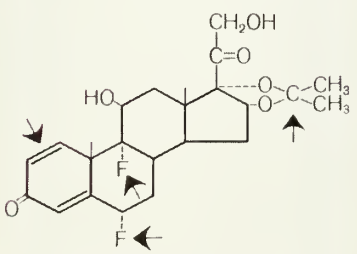
See last page for contraindications, precautions, side effects and dosage.

How advances in chemical design have achieved greater steroid potency

The chemical modification of corticosteroid molecules from the advent of hydrocortisone to the development of Synalar (fluocinolone acetonide) is a prime example of how biochemists can "design" to increase therapeutic activity and minimize undesirable side actions. Below, for example, we see the important changes that were made in reference to the hydrocortisone molecule to produce fluocinolone acetonide, one of the most active of all topical corticosteroids. As a result, a 0.01% preparation of Synalar (fluocinolone acetonide) has been reported to do the work of a 1% hydrocortisone product containing 100 times more cortiscosteroid. And it can often do it more effectively.



Hydrocortisone

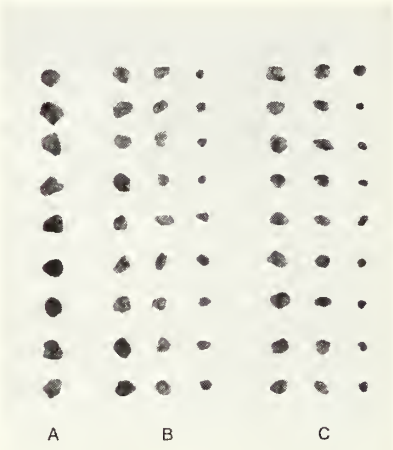


Fluocinolone Acetonide (Synalar)

- *a double bond between carbons 1 and 2*
- *fluorine substitutions at* both *the 6-α, and the 9-α positions*
- *the addition of the acetonide at the 16-α, 17-α positions, thus providing one of the most potent topical corticosteroids available.*

How bioassay tests are used to "predict" therapeutic potential

Biologic assays are another tool used by researchers to help establish the relative activity of corticosteroids. To date no single method of assaying corticosteroid activity has emerged as the ideal "yardstick" for predicting therapeutic potential. Taken together, however, these methods have proved useful. When such tests are run on various corticosteroids, a definite order of corticosteroid activity becomes evident. Compounds with the highest order of activity may be expected to merit clinical trial to establish their high therapeutic potential. When assayed by these methods, fluocinolone acetonide (Synalar) emerges as one of the most active topical corticosteroids, milligram for milligram, available for clinical application today.



THE THYMUS INVOLUTION ASSAY[1-4] is run on adrenalectomized rats. The sizes of the glands are measured, and the degree of involution caused by the steroid is determined as an indication of its potency. In the above photo, the comparative involution of thymus glands achieved with hydrocortisone and Synalar (fluocinolone acetonide) is shown. Untreated controls (A) show normal size. Group B – injected with 1, 2 and 4 mg. of hydrocortisone – show progressively smaller thymuses as does Group C – injected with fluocinolone acetonide – but with only 1/500th the dose of hydrocortisone.



THE ANTIGRANULOMA ASSAY[1-4] also utilizes adrenalectomized rats. Granulomas are induced by subcutaneous implantation of cotton pellets on either side of the thorax. The degree of granuloma inhibition achieved by a steroid reflects its potency. The above photo shows the inhibition of granuloma formation achieved with hydrocortisone and Synalar (fluocinolone acetonide). Untreated controls (A) show large, red granulomas adhering to the pellets. Group B, receiving hydrocortisone and Group C, receiving fluocinolone acetonide, show little, if any, granuloma formation. Fluocinolone acetonide produced the same effect as hydrocortisone with only 1/500th the dose. This assay, as well as the thymus involution assay, measures systemic rather than topical corticosteroid activity. Nevertheless, results by these methods correlate well with other assays and with the milligram potencies of topical steroids in current clinical use.

Worldwide clinical experience confirms the predictable therapeutic potential of Synalar

It is particularly gratifying that the promise of the advanced chemical design and high order of bioassay activity of Synalar (fluocinolone acetonide) has been confirmed by widespread therapeutic application. Indeed, the impressive clinical response rate of Synalar has been documented in no fewer than 232 papers from 22 countries.

Representative Clinical Results with Synalar*

Efficacy Documented in over 4,000 Patients

Condition	Number of Publications	Number of Patients	Significant Improvement†
Contact Dermatitis	27	750	713
Eczematous Dermatitis	21	472	409
Seborrheic Dermatitis	18	442	426
Atopic Dermatitis	24	460	426
Psoriasis	36	1,699	1,510
Neurodermatitis	18	351	324
Total	144	4,174	3,808

*Complete bibliography on request.

†Expressed by the authors as excellent, very good, good, complete remission of inflammation, etc.

PRESCRIBING INFORMATION

For initiation of therapy: Cream 0.025%, 5 and 15 Gm. tubes, 425 Gm. jars; *for emollient effect:* Ointment 0.025%, 15 Gm. tubes; *for maintenance therapy:* Cream 0.01%, 15 and 45 Gm. tubes, 120 Gm. jars; *for intertriginous or hairy sites:* Solution 0.01%, 20 cc. and 60 cc. plastic squeeze bottles; *for infected inflammatory dermatoses:* Neo-Synalar® Cream (0.025% fluocinolone acetonide, neomycin sulfate, equivalent to 0.35% neomycin base), 5 and 15 Gm. tubes.

CONTRAINDICATIONS: Tuberculous, fungal, and most viral lesions of the skin, (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of the components. PRECAUTIONS: Synalar preparations are virtually nonsensitizing and nonirritating. However, the solution may produce burning or stinging when applied to denuded or fissured areas. In some patients with dry lesions, the solution may increase dryness, scaling or itching. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. Prolonged use of any antibiotic may result in overgrowth of nonsusceptible organisms; if this occurs, appropriate therapy should be instituted. When severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. SIDE EFFECTS: Side effects are not ordinarily encountered with topically applied corticosteroids. As with all drugs, however, a few patients may react unfavorably to Synalar under certain conditions. The neomycin in Neo-Synalar Cream rarely produces allergic reactions.

REFERENCES: 1. Lerner, L. J., Bianchi, A., Turkheimer, A. R., Singer, F. M., and Borman, A.: Anti-inflammatory steroids: potency, duration and modification of activities. Ann NY Acad Sci 116:1071 (Aug. 27) 1964. 2. Idem: Comparison of anti-granuloma, thymolytic and glucocorticoid activities of anti-inflammatory steroids. Proc Soc Exp Biol Med 116:385 (June) 1964. 3. Ringler, A.: Activities of adrenocorticosteroids in experimental animals and man, in Dorfman, R. I.: Methods of hormone research, New York, Academic Press, 1964. vol. III. pp. 234-280. 4. Gubersky, V. R.: To be published.

fluocinolone acetonide — an original steroid from

SYNTEX LABORATORIES INC., PALO ALTO, CALIF.

For inflammatory dermatoses... by any measure a topical corticosteroid of choice

Synalar® (fluocinolone acetonide)

Milligram for milligram one of the most active topical corticosteroids available

Rapid and predictable in antiinflammatory and antipruritic activity

Results often comparable to those of systemic corticosteroids with fewer hazards



She simply sits while the party goes on around her, already used to being the girl who is left out. She tries to lose weight—but her emotions won't let her. She becomes irritable and depressed when she doesn't eat, and anxious when she considers her future. So each time she gives up.

"What can I do?" she asks when she visits your office. "How can I ever stay on a diet and lose weight?"

A PARTICULAR COMBINATION OF ACTIONS

Ambar® #2 Extentabs®

methamphetamine hydrochloride 15 mg., phenobarbital 64.8 mg. (1 gr.)
(Warning: may be habit forming).

FOR THE NEEDS OF THE DIETING WOMAN

A. H. Robins Co., Inc.
Richmond, Va. 23220
A·H·ROBINS

Ambar is formulated to specifically meet both t physical and emotional needs of the woman w is trying to lose weight. *Methamphetamine hyd chloride* has a powerful suppressant effect on t appetite and also provides a gentle psychic lift improve mood and encourage activity. The *pher barbital* component, through its classic calmi action, helps control irritability and anxiety, a helps counteract excessive CNS stimulation.

Also available: Ambar #1 Extentabs®—methamphetam hydrochloride 10 mg., phenobarbital 64.8 mg. (1 gr.) (W ing: may be habit forming).

BRIEF SUMMARY / *Indications:* Ambar suppresses appe and helps offset emotional reactions to dieting. *Side Effe* Nervousness or excitement occasionally noted, but usu infrequent at recommended dosages. Slight drowsiness been reported rarely. *Precautions:* Administer with caut in the presence of cardiovascular disease or hypertensi *Contraindications:* Hypersensitivity to barbiturates or s pathomimetics; patients with advanced renal or hep disease. See package insert for further details.



"Livingston...vertigo is my doom!"
Cried Stanley in his doctor's room.





Said the doc, "For your ills
I've got just the pills."



Said Stan,
"Antivert, I presume."

Antivert® tablets/syrup stops vertigo
(meclizine HCl, niacin)

Tablets: (meclizine HCl 12.5 mg. and niacin 50 mg.) Syrup: (each 5 cc. teaspoonful contains meclizine HCl 6.25 mg. and niacin 25 mg.)

Most widely prescribed anti-vertigo agent[1] Complete to moderate relief of symptoms in 9 out of 10 patients[2]

Antivert, the leading anti-vertigo product,[1] combines meclizine HCl, an outstanding drug for treatment of vestibular dysfunction, with niacin, a drug of choice for prompt vasodilation. Prescribe Antivert for your patients with vertigo, Meniere's syndrome and allied disorders.

Precautions and contraindications: Frequent, short-lived reactions include: cutaneous flushing, sensations of warmth, tingling and itching, burning of skin, increased gastrointestinal motility, and sebaceous gland activity. In explaining these reactions to the patient, it is suggested that they be regarded as a desirable physiological sign that the niacin is carrying out its intended function of vasodilation. Because of this vasodilation, severe hypotension and hemorrhage are obvious contraindications to Antivert therapy. Although the incidence of drowsiness and other atropine-like side effects such as dry mouth and blurring of vision is low, the physician should alert the patient to the need for due precautions when engaging in activities where alertness is mandatory. **Use in women of childbearing age:** A review of available animal data reveals that meclizine exerts a teratogenic response in the rat. In one study a dose of 50 mg./kg./day (50 times the maximum recommended human dose) produced cleft palate in 2 of 87 fetuses when administered to the rat at critical times during the first 15 days of gestation. At doses of 125 mg./kg./day, meclizine will produce 100% incidence of cleft palate in the rat. At doses of 25 mg./kg./day, decreased calcification of the vertebrae and relative shortening of the limbs were also produced in the rat, but experts disagree as to whether this is a teratogenic response. While available clinical data are inconclusive, scientific experts are of the opinion that this drug may possess a potential for adverse effects on the human fetus. Consequently, consideration should be given to initial use of a nonphenothiazine agent that is not suspected of having a teratogenic potential. In any case, the dosage and duration of treatment should be kept to a minimum. **Dosage:** One tablet or one to two teaspoonfuls (5-10 cc.) t.i.d. just before meals. Specific requirements for individual patients should be determined by the physician. **Supplied:** Tablets in bottles of 100 and 500. Syrup in pint bottles. RX only.

References: 1. Based on 1966 data from independent physicians' market survey organization. 2. Scal, J. C.: Eye Ear Nose & Throat Month. **38**:738 (Sept.) 1959.

Neobon®
geriatric ♀+♂ supplement

helps keep them 'on the go'

Each capsule contains:

(1) **Vitamins and Minerals**	
Vitamin A (acetate)	2000 U.S.P. units
Vitamin D (ergocalciferol, U.S.P.)	200 U.S.P. units
Vitamin B_1 (thiamine mononitrate, U.S.P.)	0.5 mg.
Vitamin B_2 (riboflavin, U.S.P.)	0.5 mg.
Vitamin B_6 (pyridoxine HCl, U.S.P.)	0.5 mg.
Niacinamide, U.S.P.	50 mg.
Calcium pantothenate, U.S.P.	5 mg.
Vitamin E (di-alpha tocopheryl acetate)	5 I.U.
Rutin	5 mg.
Cobalt (from cobalt sulfate)	0.033 mg.
Molybdenum (from sodium molybdate)	0.066 mg.
Copper (from copper sulfate)	0.33 mg.
Manganese (from manganese sulfate)	0.33 mg.
Magnesium (from magnesium sulfate)	2 mg.
Iodine (from potassium iodide)	0.05 mg.
Potassium (from potassium sulfate)	1.66 mg.
Zinc (from zinc sulfate)	0.4 mg.
(2) **Hematopoietic Factors**	
Iron (from ferrous sulfate)	3.40 mg.
Vitamin B_{12} (cobalamin concentrate, N.F., as Stablets®)	1 mcg.
Vitamin C (ascorbic acid, U.S.P.)	50 mg.
(3) **Digestive Enzyme**	
Pancreatic substance*	50 mg.
(4) **Gonadal Hormones**	
Methyltestosterone, N.F.	1.0 mg.
Ethinyl Estradiol, U.S.P.	0.006 mg.
(5) **Amino Acids**	
L-lysine (monohydrochloride)	50 mg.
L-Glutamic acid	30 mg.

*Enzymatically active defatted material obtained from 250 mg. of whole fresh pancreas.

For older adults who require it, daily supplementation with Neobon can help overcome decreases in endogenous gonadal hormone production, as well as deficiencies of iron, vitamins and other nutritional factors. In a single convenient capsule, Neobon provides vitamins, minerals, gonadal hormones, hematopoietic factors, digestive enzymes, and amino acids—all selected for adjunctive therapeutic value in the geriatric syndrome. For example, one of the gonadal hormones in Neobon is ethinyl estradiol. It is more slowly metabolized in the body than natural estrogens or their esters.

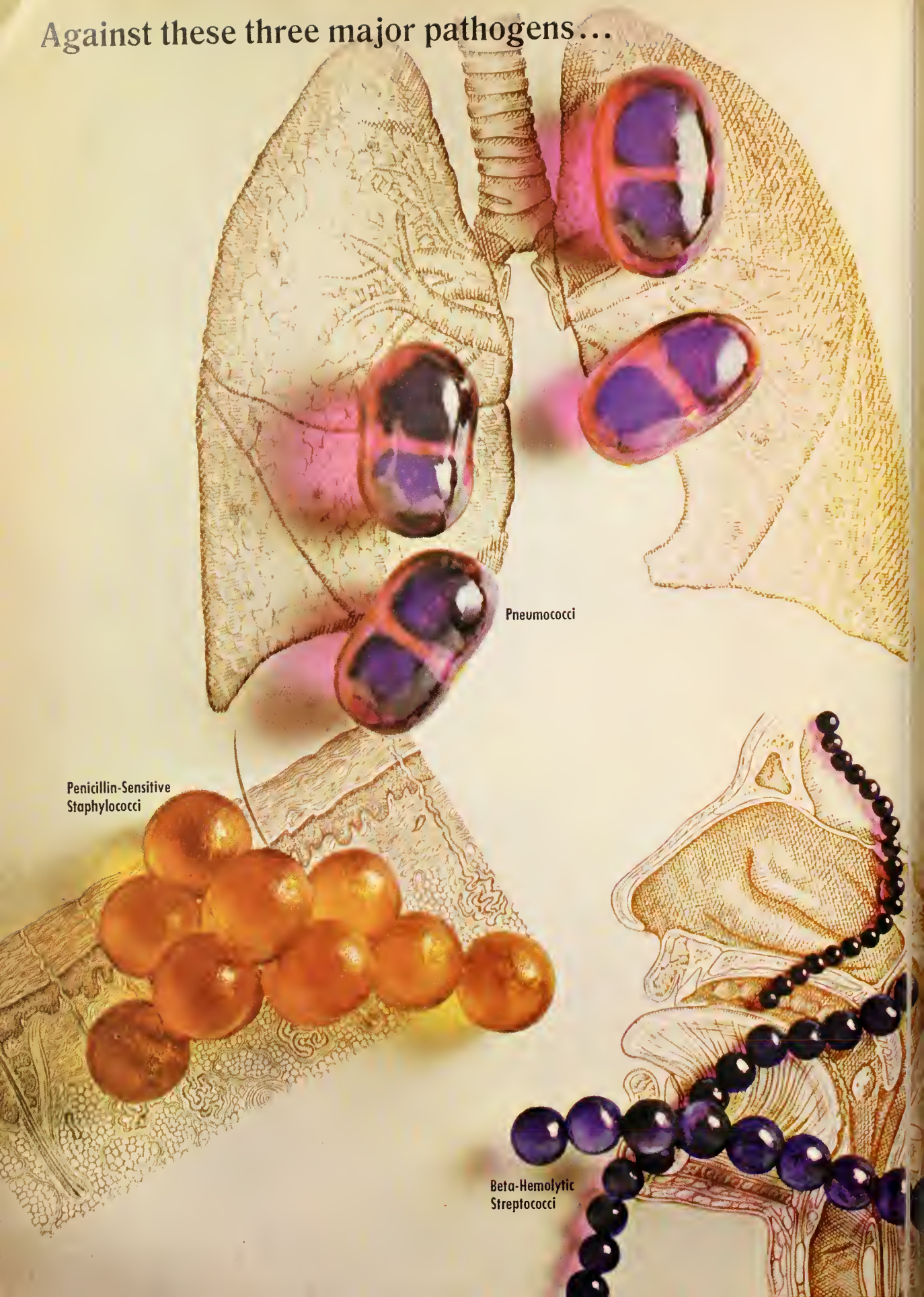
Precautions: Contraindicated in patients in whom estrogen or androgen therapy should not be used, as in carcinoma of the breast or prostate.

Dosage: One capsule, t.i.d. with meals, or as directed by physician.

Supplied: Bottles of 60 capsules. Rx only.

J.B. ROERIG DIVISION
CHAS. PFIZER & CO., INC.
NEW YORK, N.Y. 10017

Against these three major pathogens…



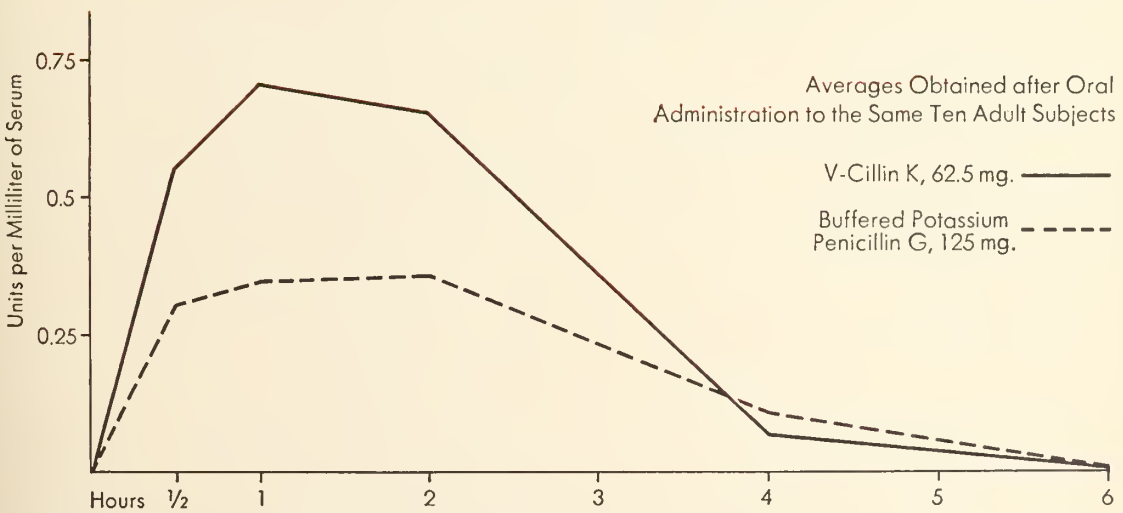
V-Cillin K® provides dependable oral antibacterial activity

because it combines a high degree of in-vitro activity...

Antibiotic	Staph. Aureus (Penicillin-Sensitive) MIC (mcg./ml.) Median	Range	Streptococcus, Group A MIC (mcg./ml.) Median	Range	Diplococcus Pneumoniae MIC (mcg./ml.) Median	Range
Penicillin V	0.02	0.02-0.04	0.02	0.003-0.4	0.01	0.005-0.2
Penicillin G	0.02	0.005-1.6	0.005	0.002-0.2	0.02	0.01-0.1
Methicillin	1.6	0.4-6.3	0.2	0.1-0.4	0.2	0.1-1.6
Oxacillin	0.4	0.1-3.1	0.04	0.02-0.4	0.1	0.04-0.8
Cloxacillin	0.2	0.2-0.8	0.1	0.1-0.8	—	—
Nafcillin	0.4	0.2-0.8	0.04	0.02-0.1	0.02	0.02-0.2
Ampicillin	0.2	0.1-0.8	0.02	0.01-0.04	0.02	0.01-0.04

Adapted from Klein, J. O., and Finland, M.: New England J. Med., 269:1019, 1963.

with high blood levels, even in the presence of food



Adapted from Griffith, R. S., and Black, H. R.: Current Ther. Res., 6 253, 1964.

V-Cillin K® Lilly

Potassium Phenoxymethyl Penicillin

(See next page for prescribing information.)

New 500 mg. tablets...a more convenient way to give high doses



Description: V-Cillin K is the potassium salt of V-Cillin® (phenoxymethyl penicillin, Lilly). This chemically improved form combines acid stability with immediate solubility and rapid absorption. Higher serum levels are obtained more rapidly with this penicillin than with equal oral doses of penicillin G. The higher serum levels and acid stability of V-Cillin K moke it a more dependable penicillin for oral use.

V-Cillin K, Pediatric, is an oral solution of clinically proved V-Cillin K in teaspoon dosage form. When mixed as directed, each 5 cc. (approximately one teospoonful) will contain 125 mg. (200,000 units) phenoxymethyl penicillin as the potassium salt.

Indications: V-Cillin K has been shown to be effective in the treatment of streptococcus, pneumococcus, and gonococcus infections as well as infections coused by sensitive strains of staphylococci. It may be used for the prophyloxis of streptococcus infections in patients with a history of rheumatic fever and for the prevention of bacterial endocarditis after tonsillectomy and tooth extraction in those patients with a history of rheumatic fever or congenital heart disease.

Contraindication: V-Cillin K should not be administered to a patient with a history of penicillin hypersensitivity.

Warnings: In rare instances, the use of penicillin may cause acute onaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin and in those with bronchial asthma or other allergies. Resuscitative drugs should be readily available for emergency administration. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for relief of immediate allergic manifestations and antihistamines and corticosteroids for dela d effects.

Precautions: V-Cillin K should be used cautiously, if at all, in a pat t with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with h n parenteral dosage schedules, frequent evaluation of the renal d hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory stu s (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth o pencillin-insensitive organisms. In such cases, its administration sho d be discontinued, and appropriate measures should be taken.

Adverse Reactions: Although serious allergic reactions are much s common with administration of oral penicillin than with intramusc r forms, manifestations of penicillin allergy may occur.

Penicillin is a substance of low toxicity, but it does possess a sig i cant index of sensitization. The following hypersensitivity reacti s associated with the use of penicillin have been reported: skin ras s ranging from maculopapular eruptions to exfoliative dermatitis; i caria; and reactions resembling serum sickness, including chills, fe r, edema, arthralgia, and prostration. Severe and often fatal anaphyl s has occurred (see Warnings). Hemolytic anemia, leukopenia, thr bocytopenia, and nephropathy are rarely observed side-effects d are usually associated with high parenteral dosage.

Administration and Dosage: For Tablets V-Cillin K and for V-Cilli Pediatric, the usual dosage ranges from 125 mg. (200,000 units) t e times a day to 500 mg. (800,000 units) every four hours. For infc s, the daily dosage may be 50 mg. per Kg. of body weight divided o three doses.

Beta-hemolytic streptococcus infections without associated b teremia may be treated with 200,000 to 400,0000 units three time a day. Therapy should be continued for a minimum of ten days to pre t development of rheumatic fever and/or other serious complicati s. Dosage for routine streptococcus prophylaxis in patients with a his of rheumatic fever or congenital heart disease may be 200,000 u once or twice daily. When such patients undergo tonsillectomy, to extraction, or other minor surgery, the prophylactic dose should 500,000 units every six hours given two days prior to surgery and two days postoperatively. If oral medication is not feasible on the of surgery, parenteral therapy should be considered. Mild to mo ately severe pneumococcus pneumonia has been treated effecti with 250 mg. every six hours.

In staphylococcus infections, 400,000 units or more should be g every six to eight hours in conjunction with indicated surgical pr dures.

For gonorrhea in males, 500 mg. (800,000 units) every four h for three doses may be employed; in females, 500 mg. every four h for six doses are recommended. Patients with a suspected lesio syphilis should have a dark-field examination before receiving peni and monthly serologic tests for a minimum of three months.

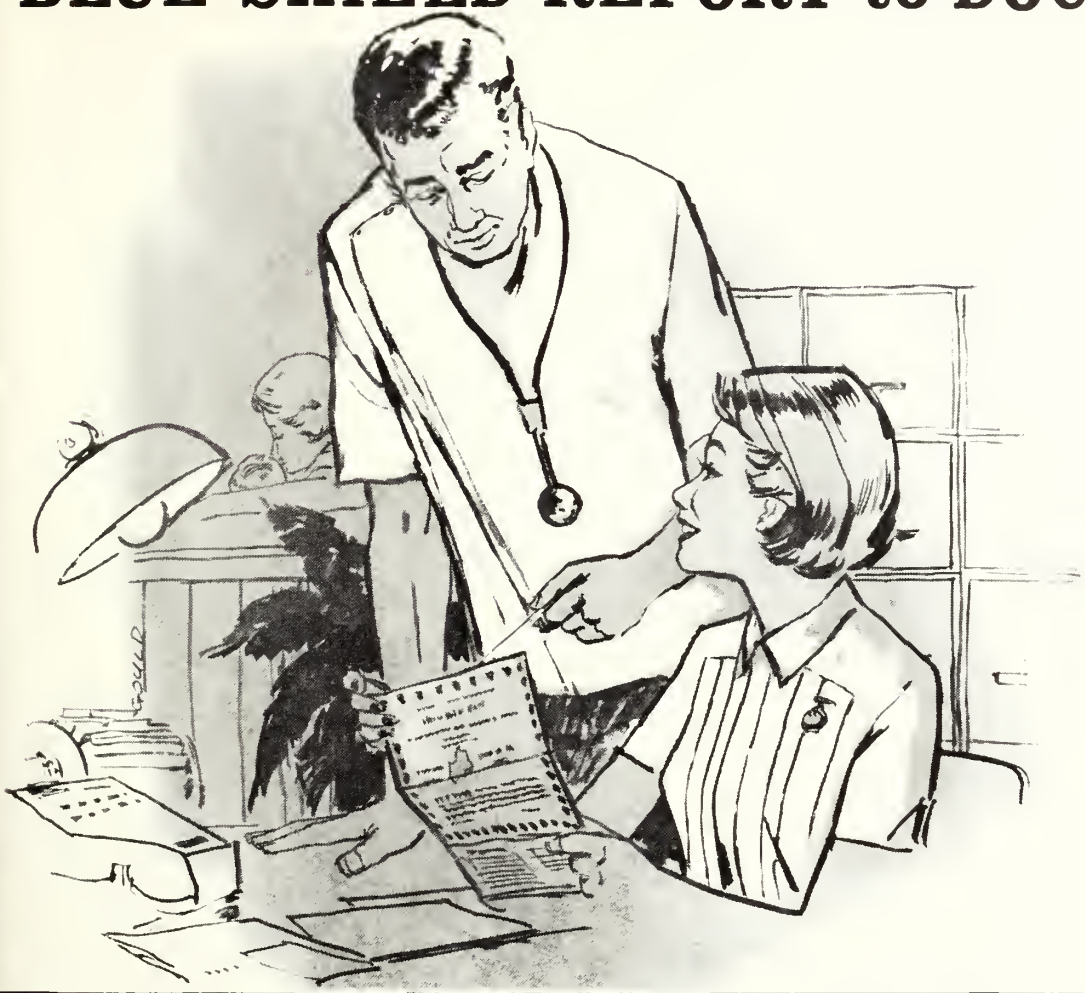
How Supplied: Tablets V-Cillin K, U.S.P., 125 mg. (200,000 units bottles of 50 and 100; and 250 mg. (400,0000 units) and 500 (800,000 units), in bottles of 24 and 100.

V-Cillin K, Pediatric, for Oral Solution, 125 mg. (200,0000 units) 5 cc. of solution, in 40, 80, and 150-cc.-size packages. [011867]

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis, Indiana 46206.

Lilly

A BLUE SHIELD REPORT to DOCTORS



REPORT # 2

Medicare — Companion Plan

Remember — the procedure regarding payments under our Companion Plan has now been simplified so that once a claim has been filed with the Medicare Carrier, no further action is required of the physician.

However, the physician should tell the patient that the Explanation of Benefits form received from the Medicare Carrier should be sent to us, *after having noted the Companion Plan Contract Number on it.* This form gives us enough information for the processing of any benefits available under the Companion Plan.

If the patient indicates that the physician's bill has been paid, our payment will go to the patient. Without such an indication, the payment will be sent to the physician.

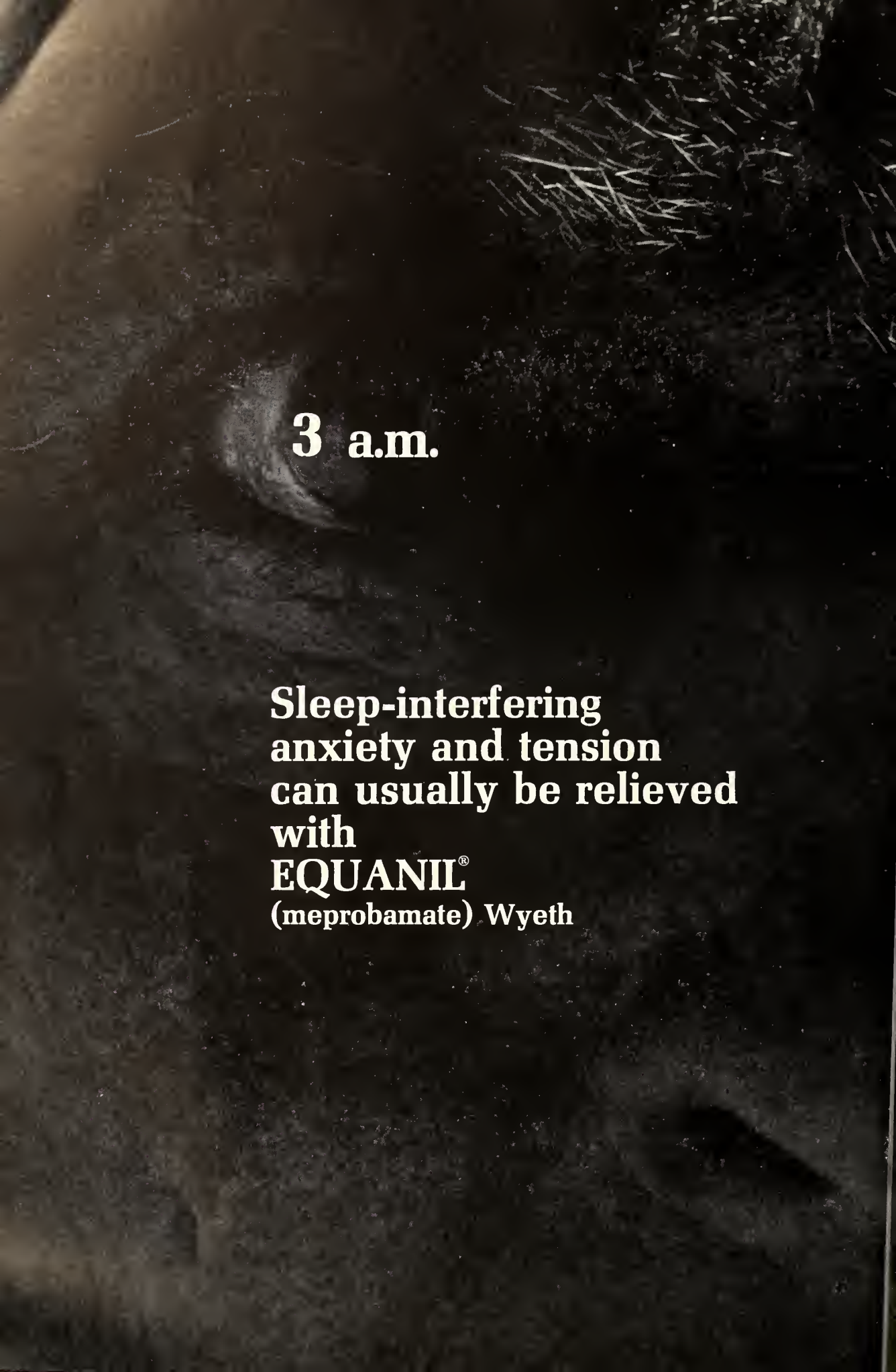
Recommend

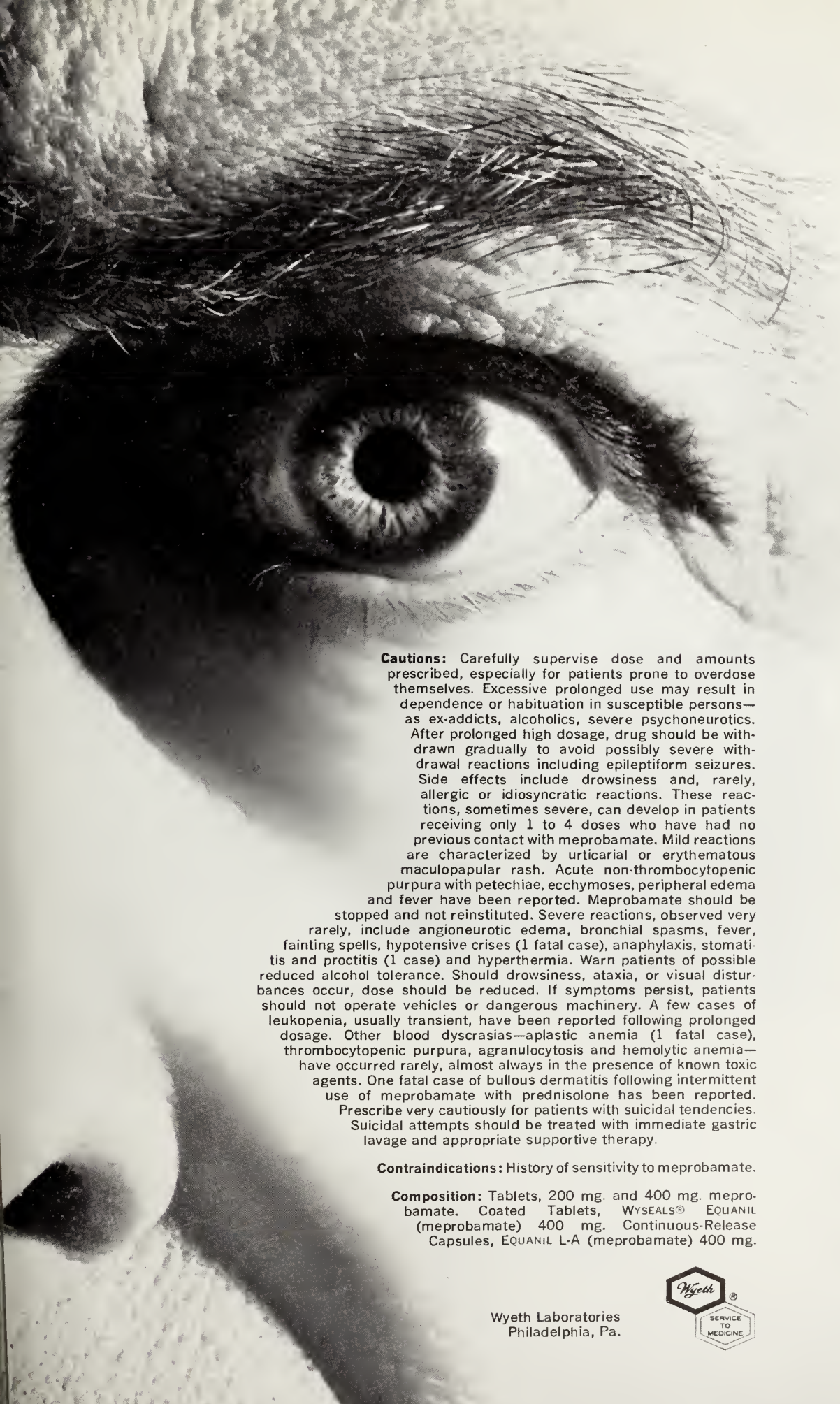
With Over 800
Participating MDs

ASSOCIATED HOSPITAL SERVICE OF MAINE

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PORTLAND, MAINE 04101


3 a.m.
Sleep-interfering
anxiety and tension
can usually be relieved
with
EQUANIL®
(meprobamate) Wyeth



Cautions: Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use may result in dependence or habituation in susceptible persons—as ex-addicts, alcoholics, severe psychoneurotics. After prolonged high dosage, drug should be withdrawn gradually to avoid possibly severe withdrawal reactions including epileptiform seizures. Side effects include drowsiness and, rarely, allergic or idiosyncratic reactions. These reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Mild reactions are characterized by urticarial or erythematous maculopapular rash. Acute non-thrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever have been reported. Meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Warn patients of possible reduced alcohol tolerance. Should drowsiness, ataxia, or visual disturbances occur, dose should be reduced. If symptoms persist, patients should not operate vehicles or dangerous machinery. A few cases of leukopenia, usually transient, have been reported following prolonged dosage. Other blood dyscrasias—aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis and hemolytic anemia—have occurred rarely, almost always in the presence of known toxic agents. One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. Prescribe very cautiously for patients with suicidal tendencies. Suicidal attempts should be treated with immediate gastric lavage and appropriate supportive therapy.

Contraindications: History of sensitivity to meprobamate.

Composition: Tablets, 200 mg. and 400 mg. meprobamate. Coated Tablets, WYSEALS® EQUANIL (meprobamate) 400 mg. Continuous-Release Capsules, EQUANIL L-A (meprobamate) 400 mg.

Wyeth Laboratories
Philadelphia, Pa.

Wyeth®
SERVICE TO MEDICINE

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IF ADVERTISED

IN THE JOURNAL

IT IS GOOD

Tandearil®
oxyphenbutazone

Tandearil in Painful Shoulder

Therapeutic Effects: Stiffness and pain may diminish within 2 days, and full mobility may be restored within a week. These effects are obtained with oxyphenbutazone alone or combined with physiotherapy or local hormonal injections. The drug is usually well tolerated and does not affect pituitary-adrenal function or immune response.

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should be closely supervised and should be warned to report immediately fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage. Make regular blood counts. Discontinue the drug and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The most common are nausea, edema and drug rash. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. Infrequently, agranulocytosis, or a generalized allergic reaction may occur and require withdrawal of medication. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported but cannot definitely be attributed to the drug. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

Dosage in Painful Shoulder: 600 mg. daily in divided doses for 2 to 3 days; 300 mg. daily thereafter. Usual duration of therapy: 2 to 7 days.

Availability: Tablets of 100 mg. 6562-VI(B)R

For complete details, please refer to full prescribing information.

Geigy
Geigy Pharmaceuticals
Division of Geigy Chemical Corporation
Ardsley, New York

Geigy

Tandearil® oxyphenbutazone helps painful shoulders move again



3 out of 4 painful shoulder patients responded well

84.2% of 127 patients

81% of 48 patients

Please see adjoining page for brief prescribing summary

TA-5094PC

Sperling, I L
Applied Therap. 6 117, 1964
Rosenbaum, E. E., and Schwarz, G R North-west Med. 61 927, 1962

Why these 7 patients with moderate to severe anxiety may respond better to Mellari

1. The agitated patient.
Anxiety—particularly that beyond th range of minor tranquilizers—fre quently is expressed as gross moto restlessness, fidgetiness and purpos less movements, and may erupt int aggressive behavior. Mellaril is a most a specific for those patien whose anxiety follows such a patter





The psychosomatic patient.
family physician is rarely given diagnostic luxury of a classic, book "anxiety state." Most often nust probe for anxiety masked by inctional disorder—or which exac-ates a somatic problem. Double-d evaluations have demonstrated Mellaril can be a significant ad-ctin the treatment of such patients.



he patient under dational stress.
aril helps the patient deal with ses of everyday life. Nonhabitu-, it can be given for extended pe-d of time. It does not "separate" atient from practical problems ressures, does not induce eupho-r a fuzziness which can compro-e the ability to cope with reali-es. Rather, it helps the patient nove more competently in his daily world by eliminating use-less tension, by allowing him to conserve emotional resources and energies, and to direct them against the problems really worth worrying about.



4. The menopausal patient.
The woman who sees change of life as the end of useful life requires support from both family and family physician. Whether the psychological impact of menopause is directly related to hormonal changes, or merely coincidental, is debatable, but estrogenic therapy is frequently inadequate. Mellaril is a useful aid for these patients and, alone, or in combination with reduced estrogen dosage, will help ease the menopausal misery.



5. The previously hospitalized psychiatric patient.
Such a patient may still require the type of medication he has been accustomed to, but because he is no longer in a controlled setting the acceptable level of adverse reactions must be lower. In such circumstances Mellaril is perhaps the drug of choice.



6. The agitated geriatric.
Tranquilizer therapy in the elderly patient always involves special (or at least accentuated) problems: the possibility of drug-induced ataxia, hypotension or depression, for example, assumes an additional significance. These reactions have rarely been observed in geriatric patients treated with Mellaril.



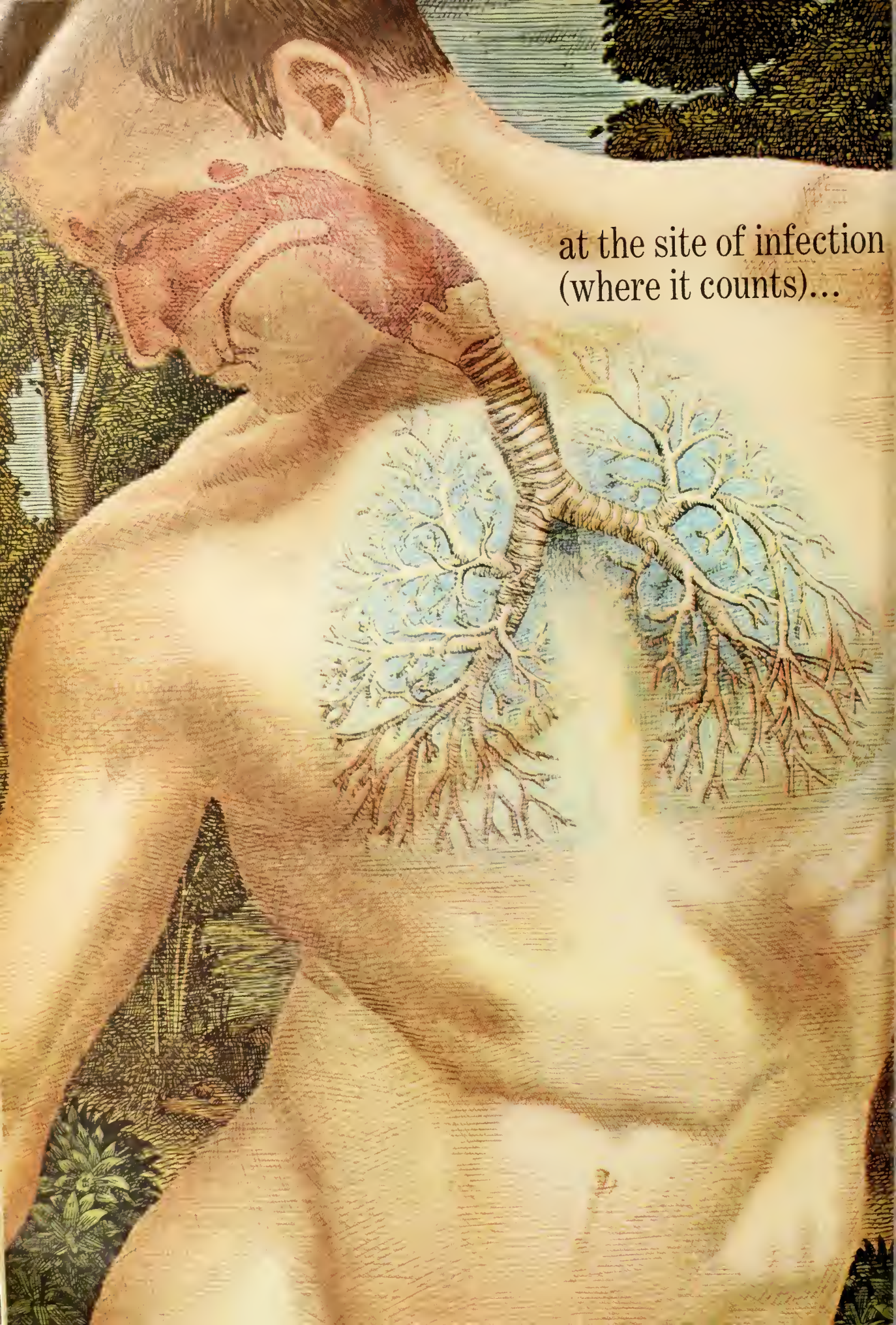
7. The constantly returning patient.
The anxiety patient who has not responded to a minor tranquilizer is not very likely to benefit from your minor tranquilizer of second choice. A major tranquilizer, such as Mellaril, may be indicated in such patients.

Contraindications: Severely depressed or comatose states from any cause, and in association with or following MAO inhibitors; severe hypertensive or hypotensive heart disease.
Precautions: Hypersensitivity reactions (e.g., leukopenia, agranulocytosis) and convulsive seizures are infrequent. Pigmentary retinopathy has been observed where doses in excess of those recommended were used for long periods of time. May potentiate central nervous system depressants, atropine, and phosphorus insecticides. Where complete mental alertness is required, administer the drug cautiously and increase dosage gradually. In addition, orthostatic hypotension (especially in female patients) has been observed. Epinephrine should be avoided in treatment of drug-induced hypotension.
Side Effects: Pseudoparkinsonism and other extrapyramidal disorders are infrequent; drowsiness, especially in high doses early in treatment, may occur; nocturnal confusion, dryness of the mouth, nasal stuffiness, headache, peripheral edema, lactation, galactorrhea, and inhibition of ejaculation are noted on occasion; photosensitivity and other allergic skin reactions may occur but are extremely rare.
Before prescribing, see package insert for full product information.

in moderate to severe anxiety, 25 mg. t.i.d.

Mellaril®
(thioridazine)

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at the site of infection
(where it counts)...

Ilosone® provides more antibacterial activity than any other oral erythromycin

Acid stable, better absorbed ... Ilosone produces faster, higher, more prolonged blood levels, even in the presence of food[1-3]

Because it is the most active form of oral erythromycin, Ilosone can help assure consistently greater antibacterial activity at the site of infection. Ilosone produces peak antibacterial blood levels two to four times those of other erythromycin preparations.[1,2] Not only are these levels attained earlier, but they are maintained for much longer periods. Even the presence of food does not seem to affect the activity of Ilosone.[1,3]

In the treatment of patients with bacterial infections susceptible to erythromycin, Ilosone has compiled an excellent therapeutic record. Since it exerts its greatest activity against gram-positive organisms, it is particularly useful in common respiratory and soft-tissue bacterial infections. Ilosone kills—not merely inhibits—streptococci, pneumococci, and more strains of staphylococci than any other macrolide antibiotic. This bactericidal action, coupled with the high antibacterial levels attained, makes Ilosone especially valuable in patients with low host resistance, such as infants, debilitated individuals, and diabetics.

Ilosone has shown no cross-resistance with penicillin and may be effective against organisms that have become resistant to that agent. Despite its high antibacterial activity, Ilosone has demonstrated a low incidence of side reactions. Blood dyscrasias, ototoxicity, and tooth staining have not been observed. Infrequent cases of drug idiosyncrasy, manifested by a cholestatic jaundice, have occurred, but there have been no known definite residual effects.

700121

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Lilly

Erythromycin Estolate

(See next page for prescribing information.)

Ilosone®/ the most active oral form of erythromycin

Description: Ilosone is the most active form of oral erythromycin that has been developed. Because it is stable in acid, well absorbed, and excreted in lesser amounts in the bile, it provides faster, higher, and longer-lasting levels of antibacterial activity (ABA) in the serum, even when taken with food, than do comparable doses of erythromycin.

Indications: Ilosone is indicated in infections caused by microorganisms sensitive to its action (especially staphylococci, hemolytic streptococci, and pneumococci). The drug is therefore useful in a high proportion of bacterial diseases encountered in clinical practice and particularly in the treatment of bacterial infections of the upper and lower respiratory tract and soft tissues.

In the treatment of acute bacterial pharyngitis and tonsillitis, this antibiotic has promptly eradicated the bacteria (streptococci) and has produced a parallel prompt clinical improvement. There have been no group A beta-hemolytic streptococci resistant to this preparation. In beta-hemolytic streptococcus infections, treatment should be maintained for ten days to prevent the development of rheumatic fever or glomerulonephritis.

Erythromycin estolate has proved to be very effective in pneumococcus pneumonia and in acute bronchitis with pneumococci on culture. Bronchopneumonia and otitis media in children have responded well to its use.

The antibiotic has been used very successfully in staphylococcus infections. Good therapeutic results have been obtained in soft-tissue infections, abscesses, cellulitis, carbuncles, wound infections, and furunculosis.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents. As is the case with any treatment regimen used in these severe conditions, surgical procedures should be performed when indicated, and large dosages of the antimicrobial agents should be employed. In this fashion, Ilosone has been effective in staphylococcus pneumonia, osteomyelitis, septicemia, empyema, and meningitis.

Multiple 500-mg. doses of the drug have been useful in gonorrhea and syphilis. Since penicillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with pre-existing liver disease or dysfunction.

Side-Effects: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have appeared in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly if the drug is readministered to sensitive patients, usually within forty-eight hours. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a second time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small compared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extrahepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeared to be definitely related to use of the drug, laboratory findings characterized by increased direct-reacting bilirubin, el alkaline phosphatase levels, negative or weakly positive ce flocculation and thymol turbidity tests, elevated serum glu oxalacetic transaminase levels, peripheral eosinophilia, an mal cholecystograms.

Individual idiosyncrasy seems evident since jaundice h been reported in other patients taking prolonged courses medication. Patients with chronic infection have been give to 2 Gm. of the drug daily for periods of two to six month patients with rheumatic fever have taken prophylactic do 0.5 Gm. daily for two years without difficulty. In one gr 144 patients who received the drug daily for two years, nc dice was noted. It was of interest that members of six of patients' families, who were not taking the drug, had ep of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels determined in a group of fifty-four adults and children wh 250 mg. of Ilosone daily for an average of sixteen mon rheumatic fever prophylaxis. The results were compare those of a similar group of forty-four patients who receive icillin. There were no cases of jaundice in either group. Ele of SGPT and serum alkaline phosphatase levels during the of treatment was observed in one patient treated with I and in two patients treated with penicillin. Seven other p in the group receiving Ilosone and four others in the pe group showed elevations in one of the tests at some time administration of the drugs.

Very satisfactory therapeutic results, without toxicity reported in 102 pediatric patients who received short-tern day) courses of Ilosone in the treatment of streptococcus tions. Results of liver function tests in these patients wer parable to those in a similar control group who had r penicillin.

Gastro-intestinal disturbances not associated with hepa fects are observed in a small proportion of individuals as a of a local stimulating effect of the medication on the alim tract; however, the normal intestinal gram-negative ba flora is not appreciably altered by erythromycin drugs.

Although allergic manifestations are uncommon with t of erythromycin, there have been occasional reports of urt skin eruptions, and, on rare occasions, anaphylaxis.

Administration and Dosage: Ilosone is administered orall

Ilosone Pulvules®
Ilosone Chewable Tablets
Ilosone Drops
Ilosone, 125, for Oral Suspension

For infants and for children under twenty-five pounds weight, the usual dosage is 5 mg. per pound every six hou children twenty-five to fifty pounds, 125 mg. every six (Tablets Ilosone Chewable should be chewed or crush swallowed with water.)

For adults and for children over fifty pounds, the usual of Ilosone is 250 mg. every six hours.

For severe infections, these dosages may be doubled.

When larger doses are indicated, parenteral erythr therapy should be considered.

In the treatment of syphilis, the recommended total d 20 to 30 Gm. given in divided doses for a period of ten to days. Close follow-up of the patient is necessary since e mycin drugs have not had adequate evaluation in all st syphilis. Examinations of spinal fluid are recommended of the follow-up therapy.

For gonorrhea, 500 mg. four times a day for four d recommended. In the treatment of gonorrhea, patients suspected lesion of syphilis should have a dark-field exam before receiving antibiotics, and monthly serologic tests be made for a period of three months.

How Supplied: Pulvules Ilosone, Capsules, N.F., 125 and (equivalent to base), in bottles of 24 and 100.

Tablets Ilosone Chewable, N.F., 125 mg. (equivalent t in bottles of 50.

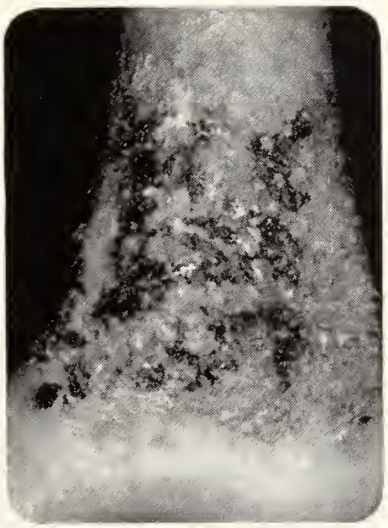
Ilosone Drops, 5 mg. (equivalent to base) per drop, in size packages, with dropper calibrated at 25 and 50 mg

Ilosone, 125, for Oral Suspension, N.F., 125 mg. (equ to base) per 5-cc. teaspoonful, in 60 and 150-cc.-size pa

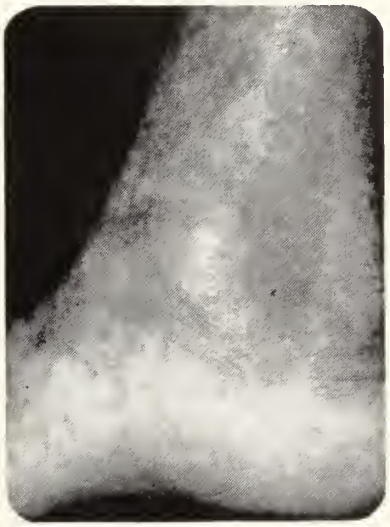
References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*. 2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:3 3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:19

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Precautions and Side Effects: Do not use in the eyes or in the ear (if drum is perforated). A few individuals react unfavorably under certain conditions. If side effects are encountered, the drug should be discontinued and appropriate measures taken. Use on infected areas should be attended with caution and observation, bearing in mind the potential spreading of infection and the advisability of discontinuing therapy and/or initiating antibacterial measures. Generalized dermatological conditions may require systemic corticosteroid therapy. Steroid therapy, although responsible for remissions of dermatoses, especially of allergic origin cannot be expected to prevent recurrence. The use over extensive body areas, with or without occlusive nonpermeable dressings, may result in systemic absorption. Appropriate precautions should be taken. When occlusive nonpermeable dressings are used, miliaria, folliculitis and pyodermas will sometimes develop. Localized atrophy and striae have been reported with the use of steroids by the occlusive technique. When occlusive nonpermeable dressings are used, the physician should be aware of the hazards of suffocation and flammability. The safety of use on pregnant patients has not been firmly established. Thus, do not use in large amounts or for long periods of time on pregnant patients.

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Contraindications: Patients with known hypersensitivity to the drug.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards.

Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e.g., excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver-function tests advisable during protracted therapy.

Usual Daily Dosage: Individualize for maximum beneficial effects. *Oral*—Adults: Mild and moderate anxiety and tension, 5 or 10 mg t.i.d. or q.i.d.; severe states, 20 or 25 mg t.i.d. or q.i.d. Geriatric patients: 5 mg b.i.d. to q.i.d. (See Precautions.)

Supplied: Librium® (chlordiazepoxide HCl) Capsules, 5 mg, 10 mg and 25 mg—bottles of 50. Libritabs™ (chlordiazepoxide) Tablets, 5 mg, 10 mg and 25 mg—bottles of 100. With respect to clinical activity, capsules and tablets are indistinguishable.

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THE JOURNAL
of
The Maine Medical Association

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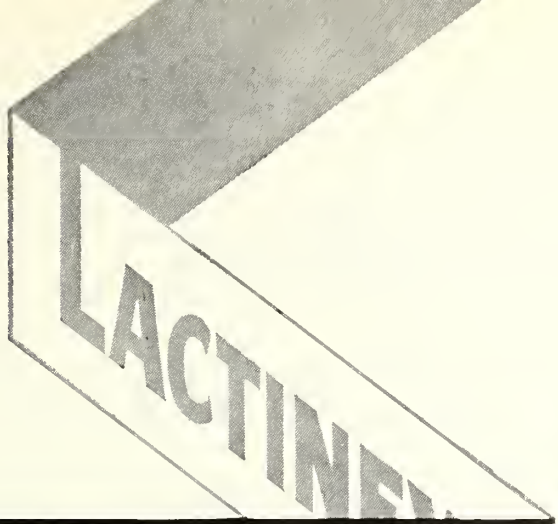
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References:

(1) Siver, R. H.: CMD, *21*:109, September 1954. (2) Frykman, H. H.: Minn. Med., *38*:19-27, January 1955. (3) McGivney, J.: Tex. State Jour. Med., *51*:16-18, January 1955. (4) Quehl, T. M.: Jour. of Florida Acad. Gen. Prac., *15*:15-16, October 1965. (5) Weekes, D. J.: N.Y. State Jour. Med., *58*:2672-2673, August 1958. (6) Weekes, D. J.: EENT Digest, *25*:47-59, December 1963. (7) Abbott, P. L.: Jour. Oral Surg., Anes., & Hosp. Dental Serv., 310-312, July 1961. (8) Rapoport, L. and Levine, W. I.: Oral Surg., Oral Med. & Oral Path., *20*:591-593, November 1965.

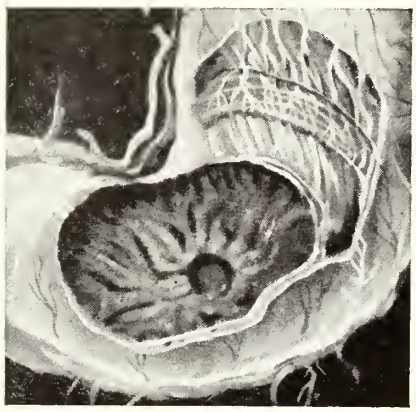
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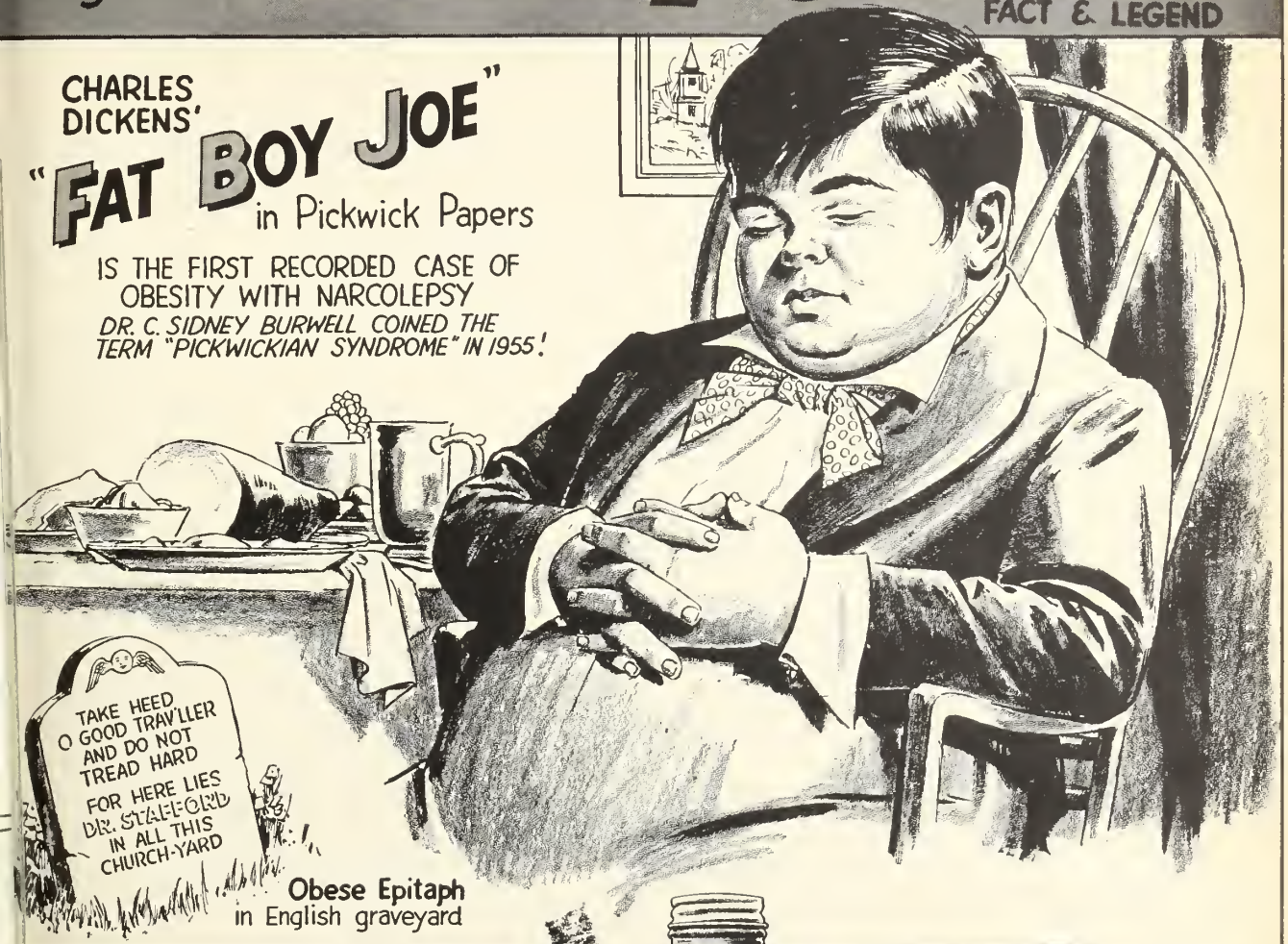
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The AMBAR SCRAPBOOK of Obesity Oddities
FACT & LEGEND

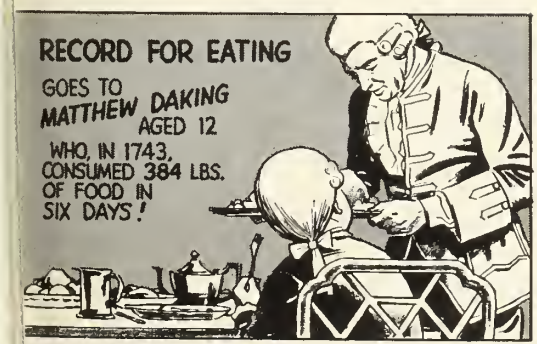
CHARLES DICKENS'
"FAT BOY JOE"
in Pickwick Papers

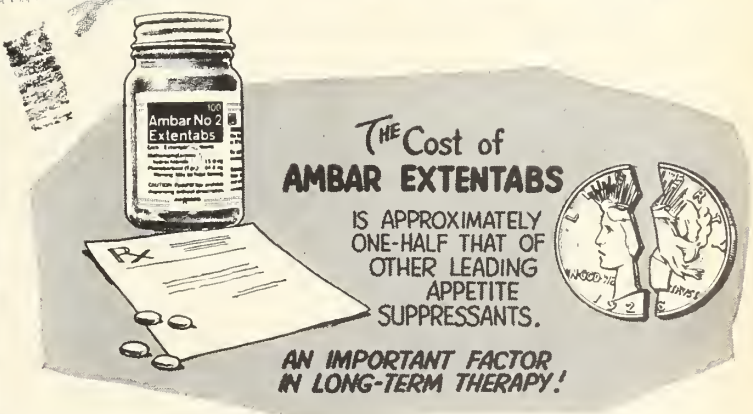
IS THE FIRST RECORDED CASE OF OBESITY WITH NARCOLEPSY

DR. C. SIDNEY BURWELL COINED THE TERM "PICKWICKIAN SYNDROME" IN 1955!



Obese Epitaph
in English graveyard





NTROL FOOD AND MOOD ALL DAY LONG WITH A SINGLE MORNING DOSE

AMBAR #2 EXTENTABS®

methamphetamine HCl 15 mg.,
phenobarbital 64.8 mg. (1 gr.)
(Warning: may be habit forming).

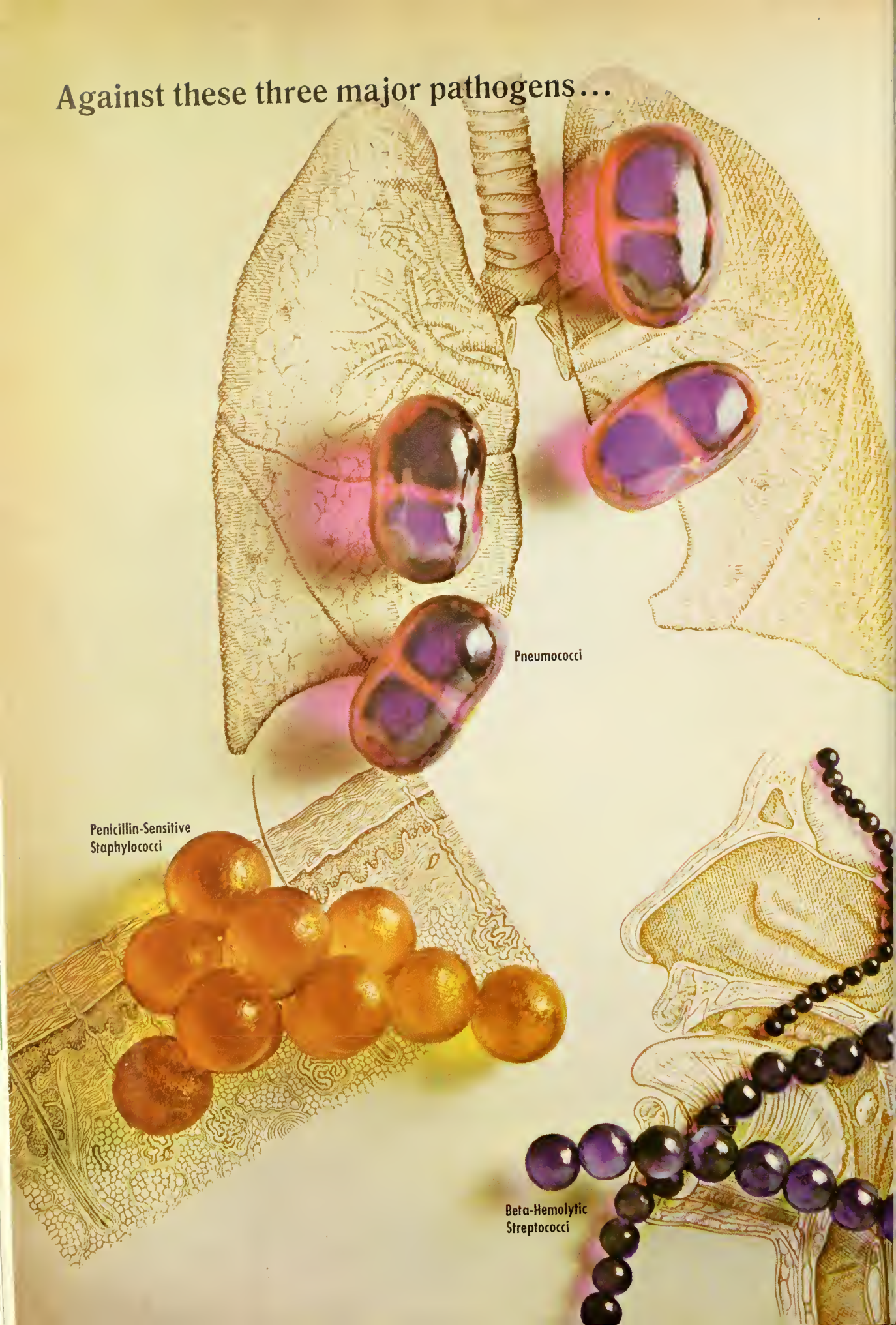
n Ambar Extentab before breakfast can
l control most patients' appetite for up
hours. Methamphetamine, the appe-
e uppressant, gently elevates mood and
l overcome dieting frustrations. Pheno-
r tal, the sedative in Ambar, controls irritability and
x y...helps maintain a state of mental calm and equa-
n . Both work together to ease the tensions that erode
illpower during periods of dieting.
s available: Ambar #1 Extentabs®—methamphetamine
l chloride 10 mg., phenobarbital 64.8 mg. (1 gr.) (Warn-
: ay be habit forming).

BRIEF SUMMARY/**Indications:** Ambar suppresses appetite and helps offset emotional reactions to dieting. **Contraindications:** Hypersensitivity to barbiturates or sympathomimetics; patients with advanced renal or hepatic disease. **Precautions:** Administer with caution in the presence of cardiovascular disease or hypertension. **Side Effects:** Nervousness or excitement occasionally noted, but usually infrequent at recommended dosages. Slight drowsiness has been reported rarely. See package insert for further details.

A. H. ROBINS COMPANY,
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A·H·ROBINS

Against these three major pathogens...



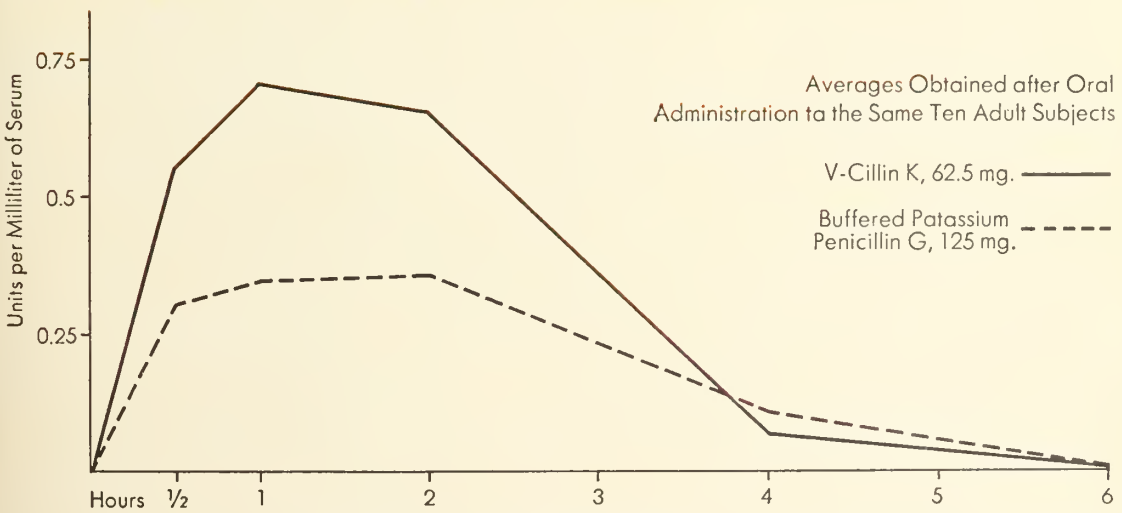
V-Cillin K® provides dependable oral antibacterial activity

because it combines a high degree of in-vitro activity...

Antibiotic	Staph. Aureus (Penicillin-Sensitive) MIC (mcg./ml.) Median	Range	Streptacoccus, Group A MIC (mcg./ml.) Median	Range	Diplococcus Pneumoniae MIC (mcg./ml.) Median	Range
Penicillin V	0.02	0.02-0.04	0.02	0.003-0.4	0.01	0.005-0.2
Penicillin G	0.02	0.005-1.6	0.005	0.002-0.2	0.02	0.01-0.1
Methicillin	1.6	0.4-6.3	0.2	0.1-0.4	0.2	0.1-1.6
Oxacillin	0.4	0.1-3.1	0.04	0.02-0.4	0.1	0.04-0.8
Cloxacillin	0.2	0.2-0.8	0.1	0.1-0.8	—	—
Nafcillin	0.4	0.2-0.8	0.04	0.02-0.1	0.02	0.02-0.2
Ampicillin	0.2	0.1-0.8	0.02	0.01-0.04	0.02	0.01-0.04

Adapted from Klein, J. O., and Finland, M.: New England J. Med., 269:1019, 1963.

with high blood levels, even in the presence of food



Adapted from Griffith, R. S., and Black, H. R.: Current Ther. Res., 6 253, 1964.

V-Cillin K® Lilly 700636

Potassium Phenoxymethyl Penicillin

(See next page for prescribing information.)

New 500 mg. tablets...a more convenient way to give high doses



Description: V-Cillin K is the potassium salt of V-Cillin® (phenoxymethyl penicillin, Lilly). This chemically improved form combines acid stability with immediate solubility and rapid absorption. Higher serum levels are obtained more rapidly with this penicillin than with equal oral doses of penicillin G. The higher serum levels and acid stability of V-Cillin K make it a more dependable penicillin for oral use.

V-Cillin K, Pediatric, is an oral solution of clinically proved V-Cillin K in teaspoon dosage form. When mixed as directed, each 5 cc. (approximately one teaspoonful) will contain 125 mg. (200,000 units) phenoxymethyl penicillin as the potassium salt.

Indications: V-Cillin K has been shown to be effective in the treatment of streptococcus, pneumococcus, and gonococcus infections as well as infections caused by sensitive strains of staphylococci. It may be used for the prophylaxis of streptococcus infections in patients with a history of rheumatic fever and for the prevention of bacterial endocarditis after tonsillectomy and tooth extraction in those patients with a history of rheumatic fever or congenital heart disease.

Contraindication: V-Cillin K should not be administered to a patient with a history of penicillin hypersensitivity.

Warnings: In rare instances, the use of penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin and in those with bronchial asthma or other allergies. Resuscitative drugs should be readily available for emergency administration. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for relief of immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: V-Cillin K should be used cautiously, if at all, in a patient with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with high parenteral dosage schedules, frequent evaluation of the renal and hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory studies (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth of penicillin-insensitive organisms. In such cases, its administration should be discontinued, and appropriate measures should be taken.

Adverse Reactions: Although serious allergic reactions are much less common with administration of oral penicillin than with intramuscular forms, manifestations of penicillin allergy may occur.

Penicillin is a substance of low toxicity, but it does possess a significant index of sensitization. The following hypersensitivity reactions associated with the use of penicillin have been reported: skin rashes ranging from maculopapular eruptions to exfoliative dermatitis, urticaria; and reactions resembling serum sickness, including chills, fever, edema, arthralgia, and prostration. Severe and often fatal anaphylaxis has occurred (see Warnings). Hemolytic anemia, leukopenia, thrombocytopenia, and nephropathy are rarely observed side-effects and are usually associated with high parenteral dosage.

Administration and Dosage: For Tablets V-Cillin K and for V-Cillin K Pediatric, the usual dosage ranges from 125 mg. (200,000 units) three times a day to 500 mg. (800,000 units) every four hours. For infants the daily dosage may be 50 mg. per Kg. of body weight divided into three doses.

Beta-hemolytic streptococcus infections without associated bacteremia may be treated with 200,000 to 400,0000 units three times a day. Therapy should be continued for a minimum of ten days to prevent development of rheumatic fever and/or other serious complications. Dosage for routine streptococcus prophylaxis in patients with a history of rheumatic fever or congenital heart disease may be 200,000 units once or twice daily. When such patients undergo tonsillectomy or tooth extraction, or other minor surgery, the prophylactic dose should be 500,000 units every six hours given two days prior to surgery and for two days postoperatively. If oral medication is not feasible on the day of surgery, parenteral therapy should be considered. Mild to moderately severe pneumococcus pneumonia has been treated effectively with 250 mg. every six hours.

In staphylococcus infections, 400,000 units or more should be given every six to eight hours in conjunction with indicated surgical procedures.

For gonorrhea in males, 500 mg. (800,000 units) every four hours for three doses may be employed; in females, 500 mg. every four hours for six doses are recommended. Refractory infections generally respond to a second treatment three to four days following completion of the first. Treatment of gonorrhea with severe complications should be individualized, with prolonged and intensive treatment. Patients with suspected lesion of syphilis should have a dark-field examination before receiving penicillin and monthly serologic tests for a minimum of three months.

How Supplied: Tablets V-Cillin K, U.S.P., 125 mg. (200,000 units), in bottles of 50 and 100; and 250 mg. (400,0000 units) and 500 mg. (800,000 units), in bottles of 24 and 100.

V-Cillin K, Pediatric, for Oral Solution, 125 mg. (200,000 units) per 5 cc. of solution, in 40, 80, and 150-cc.-size packages.

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis, Indiana 46206.

Lilly

There are 10,300* undetected diabetics in Maine

Most of these are probably among patients over 40; the overweight; relatives of diabetics, and mothers of large babies. By the time polyphagia, polyuria, polydipsia, pruritus or other overt symptoms of diabetes appear, damage may have been done that could have been minimized. DEXTROSTIX® gives you a reliable blood-glucose estimate in 60 seconds.

Why Wait?



*Based on Statistical Report, U.S. Dept. Commerce, ed. 86, and Fisher, G. F., and Vavra, H. M.: Pub. Health Rep. *80*:961 (Nov.) 1965.

Note: DEXTROSTIX is not meant to replace the more precise analytical laboratory procedures such as needed in glucose tolerance testing.

AMES COMPANY, Division Miles Laboratories, Inc., Elkhart, Indiana 46514 428R67

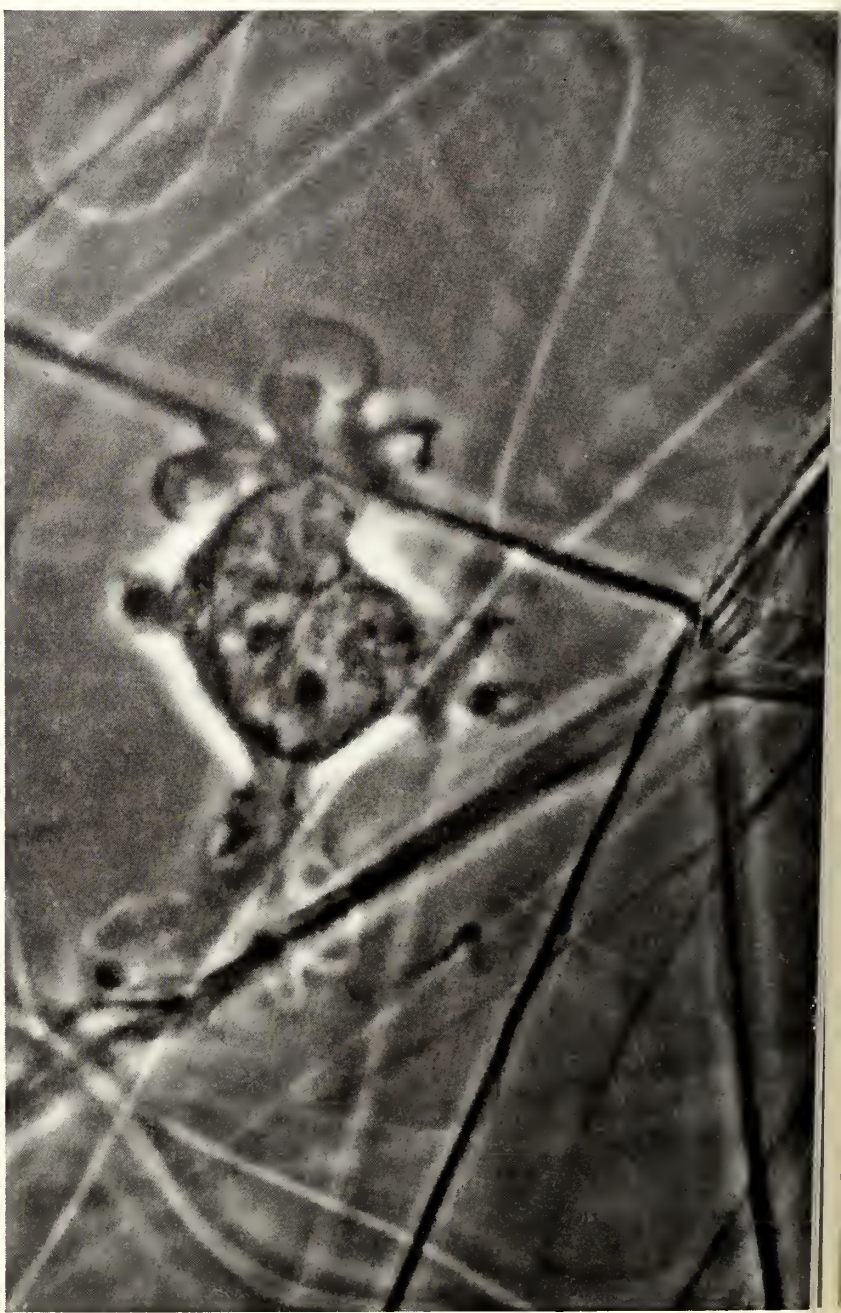
Ames

INFLAMMATION:
A cellular fight for life

A SYNTEX REPORT based on recently developed hypotheses about topical corticosteroids, including the cellular theories of inflammation by Thomas F. Dougherty, Ph.D., University of Utah.

You are looking at a fibroblast fighting for life. This cell—one of the most common found in connective tissue—has literally been poisoned by cytotoxins released from other cells that have ruptured. Soon, if the abnormal activity of this fibroblast does not cease, it, too, will rupture and die—one more casualty in the inflammatory wave of destruction precipitated by injury.

Until a short time ago no one had ever witnessed such a scene at the cellular level. Now, through advanced cinemicrographic techniques, it is possible to view and photograph the inflammatory process as produced experimentally in living animal tissue. This method permits new insight into the mechanism of inflammation and the role of corticosteroids in therapeutic management. Equally important, these techniques shed new light on factors that may make one corticosteroid more effective than another—factors that can be correlated with other chemical, biologic, and clinical parameters.

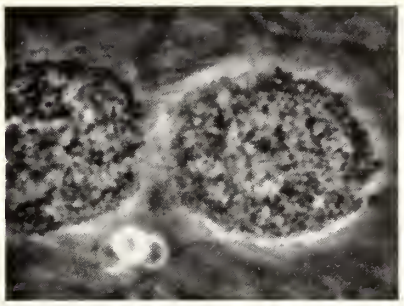


Visual evidence of how corticosteroids influence the inflammatory reaction

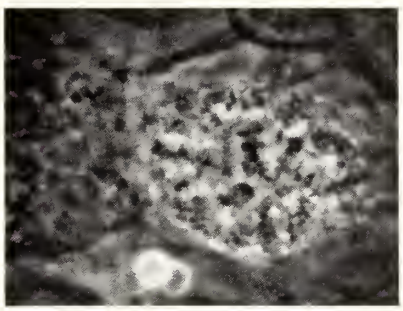
Working with phase-contrast cinemicrography on living animal tissue, Doctors Thomas F. Dougherty and David Berliner of the University of Utah College of Medicine have actually filmed cellular events that occur during the inflammatory reaction. This remarkable study* and additional work by these investigators, as well as by others, have established a new theoretical biologic basis for the antiinflammatory effect of the corticosteroids. (It must be noted that other theories, such as the lysosome or so-called "suicide bag" theory, have been postulated, although it is quite likely that there are more similarities than differences among the various theoretical models.)

The inflammatory wave of destruction

In this investigation an injurious injection of gelatin is used to set off an inflammatory reaction in living mouse tissue. What follows is a wave of destructive cellular activity that comprises the inflammatory response to injury. Mast cells (which contain heparin, serotonin and histamine) take up water, swell and rupture, releasing their contents, which are toxic outside the mast cell wall. These toxins, in turn, cause disintegration of other cells (such as fibroblasts) and the release of additional toxic material. Capillaries, too, take up water and leak unformed blood elements, causing edema. And polymorphonuclears, lymphocytes and perithelial cells invade the inflamed site. As a result of all these changes, the cellular environment reaches a state of turmoil.



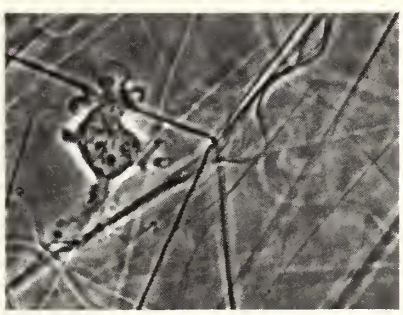
Phase-contrast microscopy showing mast cell before injury.



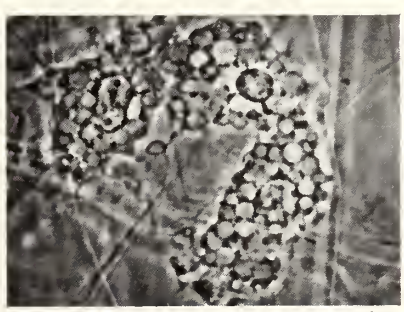
Mast cell (after injury) has broken up and released cytotoxins.

How corticosteroids change the picture

Corticosteroids appear to virtually stop the abnormal cellular activity that constitutes the inflammatory reaction. This permits the body's natural resources to clear up the inflamed area and repair the damaged tissue. This interpretation is supported by the fact that when the injurious gelatin solution is injected simultaneously with a corticosteroid —Synalar (fluocinolone acetonide)— the inflammatory pattern simply does not develop.



Fibroblast in high state of activity, much distorted.



Mast cells showing effects of corticosteroid action: cells are normal in size, shape and activity.



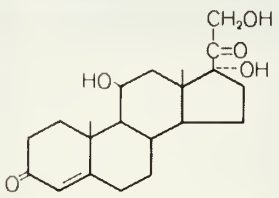
In summarizing his study Doctor Dougherty states: "...we also feel this work may explain why one corticosteroid helps a patient more rapidly and effectively than another. If it does, it is because one corticosteroid is the fastest, most effective inhibitor of the series of inflammatory events at the tissue level."

**A New View of Corticosteroid Action in Inflammatory Dermatoses,* a film based on this study, is now available from your Syntex representative.

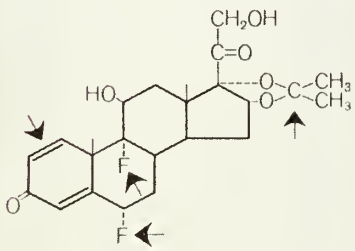
See last page for contraindications, precautions, side effects and dosage

How advances in chemical design have achieved greater steroid potency

The chemical modification of corticosteroid molecules from the advent of hydrocortisone to the development of Synalar (fluocinolone acetonide) is a prime example of how biochemists can "design" to increase therapeutic activity and minimize undesirable side actions. Below, for example, we see the important changes that were made in reference to the hydrocortisone molecule to produce fluocinolone acetonide, one of the most active of all topical corticosteroids. As a result, a 0.01% preparation of Synalar (fluocinolone acetonide) has been reported to do the work of a 1% hydrocortisone product containing 100 times more cortiscosteroid. And it can often do it more effectively.



Hydrocortisone

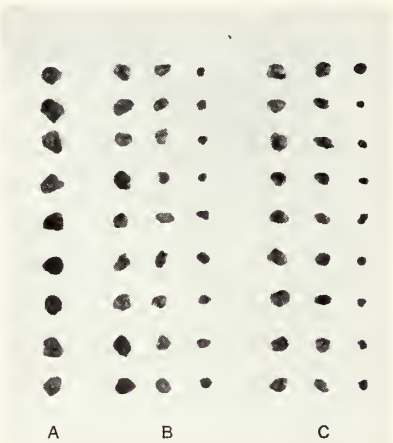


Fluocinolone Acetonide (Synalar)

- *a double bond between carbons 1 and 2*
- *fluorine substitutions at* both *the 6-α, and the 9-α positions*
- *the addition of the acetonide at the 16-α, 17-α positions, thus providing one of the most potent topical corticosteroids available.*

How bioassay tests are used to "predict" therapeutic potential

Biologic assays are another tool used by researchers to help establish the relative activity of corticosteroids. To date no single method of assaying corticosteroid activity has emerged as the ideal "yardstick" for predicting therapeutic potential. Taken together, however, these methods have proved useful. When such tests are run on various corticosteroids, a definite order of corticosteroid activity becomes evident. Compounds with the highest order of activity may be expected to merit clinical trial to establish their high therapeutic potential. When assayed by these methods, fluocinolone acetonide (Synalar) emerges as one of the most active topical corticosteroids, milligram for milligram, available for clinical application today.



THE THYMUS INVOLUTION ASSAY[1-4] is run on adrenalectomized rats. The sizes of the glands are measured, and the degree of involution caused by the steroid is determined as an indication of its potency. In the above photo, the comparative involution of thymus glands achieved with hydrocortisone and Synalar (fluocinolone acetonide) is shown. Untreated controls (A) show normal size. Group B – injected with 1, 2 and 4 mg. of hydrocortisone – show progressively smaller thymuses as does Group C – injected with fluocinolone acetonide – but with only 1/500th the dose of hydrocortisone.



THE ANTIGRANULOMA ASSAY[1-4] also utilizes adrenalectomized rats. Granulomas are induced by subcutaneous implantation of cotton pellets on either side of the thorax. The degree of granuloma inhibition achieved by a steroid reflects its potency. The above photo shows the inhibition of granuloma formation achieved with hydrocortisone and Synalar (fluocinolone acetonide). Untreated controls (A) show large, red granulomas adhering to the pellets. Group B, receiving hydrocortisone and Group C, receiving fluocinolone acetonide, show little, if any, granuloma formation. Fluocinolone acetonide produced the same effect as hydrocortisone with only 1/500th the dose. This assay, as well as the thymus involution assay, measures systemic rather than topical corticosteroid activity. Nevertheless, results by these methods correlate well with other assays and with the milligram potencies of topical steroids in current clinical use.

Worldwide clinical experience confirms the predictable therapeutic potential of Synalar

It is particularly gratifying that the promise of the advanced chemical design and high order of bioassay activity of Synalar (fluocinolone acetonide) has been confirmed by widespread therapeutic application. Indeed, the impressive clinical response rate of Synalar has been documented in no fewer than 232 papers from 22 countries.

Representative Clinical Results with Synalar*

Efficacy Documented in over 4,000 Patients

Condition	Number of Publications	Number of Patients	Significant Improvement†
Contact Dermatitis	27	750	713
Eczematous Dermatitis	21	472	409
Seborrheic Dermatitis	18	442	426
Atopic Dermatitis	24	460	426
Psoriasis	36	1,699	1,510
Neurodermatitis	18	351	324
Total	144	4,174	3,808

*Complete bibliography on request.

†Expressed by the authors as excellent, very good, good, complete remission of inflammation, etc.

PRESCRIBING INFORMATION

For initiation of therapy: Cream 0.025%, 5 and 15 Gm. tubes, 425 Gm. jars; *for emollient effect:* Ointment 0.025%, 15 Gm. tubes; *for maintenance therapy:* Cream 0.01%, 15 and 45 Gm. tubes, 120 Gm. jars; *for intertriginous or hairy sites:* Solution 0.01%, 20 cc. and 60 cc. plastic squeeze bottles; *for infected inflammatory dermatoses:* Neo-Synalar® Cream (0.025% fluocinolone acetonide, neomycin sulfate, equivalent to 0.35% neomycin base), 5 and 15 Gm. tubes.

CONTRAINDICATIONS: Tuberculous, fungal, and most viral lesions of the skin, (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of the components. PRECAUTIONS: Synalar preparations are virtually nonsensitizing and nonirritating. However, the solution may produce burning or stinging when applied to denuded or fissured areas. In some patients with dry lesions, the solution may increase dryness, scaling or itching. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. Prolonged use of any antibiotic may result in overgrowth of nonsusceptible organisms; if this occurs, appropriate therapy should be instituted. When severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. SIDE EFFECTS: Side effects are not ordinarily encountered with topically applied corticosteroids. As with all drugs, however, a few patients may react unfavorably to Synalar under certain conditions. The neomycin in Neo-Synalar Cream rarely produces allergic reactions.

REFERENCES: 1. Lerner, L. J., Bianchi, A., Turkheimer, A. R., Singer, F. M., and Borman, A.: Anti-inflammatory steroids: potency, duration and modification of activities. Ann NY Acad Sci 116:1071 (Aug. 27) 1964. 2. Idem: Comparison of anti-granuloma, thymolytic and glucocorticoid activities of anti-inflammatory steroids. Proc Soc Exp Biol Med 116:385 (June) 1964. 3. Ringler, A.: Activities of adrenocorticosteroids in experimental animals and man, in Dorfman, R. I.: Methods of hormone research, New York, Academic Press, 1964. vol. III. pp. 234-280. 4. Gubersky, V. R.: To be published.

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Synalar® (fluocinolone acetonide)

Milligram for milligram one of the most active topical corticosteroids available

Rapid and predictable in antiinflammatory and antipruritic activity

Results often comparable to those of systemic corticosteroids with fewer hazards


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quick relief
that lasts
and lasts
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of the
Maine Medical Association

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Minimum Standards of Physical Fitness Required of Candidates for Collision Sports at the University of Maine

James D. Clement, Jr., M.D., Robert A. Graves, M.D.,
Russell M. Lane, M.D. and Hans Weisz, M.D.

About the middle of August every year, high school football coaches throughout the state greet various sized groups of eager boys, aged generally between 14 and 18, aspiring to become members of a state championship football team. It is a credit to their coaches that a good many of these boys grow to love football and become outstanding players. Too often, however, when one of these outstanding players goes out for football in college, he finds he has a condition, sometimes present for years, which medically disqualifies him from further participation in this sport. This happens despite the fact that most schools have provided for yearly medical examinations of all football candidates prior to fall practice. Failure to disqualify these boys in high school results when the examining physician, not understanding the traumatic possibilities inherent in the game, fails to set up certain minimum standards of physical qualification. Since every play involves a deliberate attempt on the part of each player to 1.) knock an opposing player off his feet by colliding with him or, 2.) in the case of certain offensive players, to avoid such a fate, we prefer to classify football as a *Collision Sport* to separate it from sports such as basketball in which contact is incidental, not the objective. This paper is an attempt to acquaint physicians handling high school football teams with the minimum standards of physical fitness, in use at the University of Maine, required of all candidates for "collision sports."

Certain conditions are absolutely disqualifying regardless of the supplications of the student, his family, his family physician, or his coach. Since this is the area that will embroil the team physician in the most controversy, we would like to emphasize his responsibility. Ninety-nine percent of all young people consider themselves completely indestructible and no amount of reasoning is apt to persuade a candidate he should give up football for his own good. Since parents are motivated by a sense of "backing up" their son and since they are not equipped by training or experience to properly evaluate a medical risk to their son, waivers signed by parents are useless. The coach is knowledgeable as far as the risks of the game itself are concerned, but is not qualified to judge medical risks. In our experience, coaches are only too happy to have a team physician in whom they have confidence take the responsibility for these decisions. Finally, other physicians may advise the team physician to allow a boy to participate, but this is not their responsibility, and they are more vulnerable to pressure from the boy's family. We use consultants freely as a logical means of establishing the medical-surgical facts in question, but once the factual status is established the team physician must make the decision on participation.

These are our minimum standards:

I. *Absolutely Disqualifying Conditions.*

A. Loss of function of one of certain paired organs. No sport is worth the risk of blindness, death or sterility.

1. Eye. If his bad eye can be corrected to 20/80 or better we allow him to play. In such cases of partial loss of function, eligibility is dependent on how disabled the student would be if he lost his good eye.
2. Kidney.
3. Testis. If loss of the functioning testis would leave the boy sterile, he is not allowed to compete.

B. Head.

1. A history of conditions likely to have left the brain or meninges scarred, such as brain surgery, lacera-

tion of brain tissues, sub-dural hematoma, epidural hemorrhage, sub-arachnoid hemorrhage, or other intra-cranial vascular anomaly. Example: – A football player at another university was known to have suffered a sub-arachnoid hemorrhage. He was subsequently allowed to play football and did so for two years without incident. Toward the end of the season in 1966 he got a sharp jolt to the head and was still in a coma three weeks later. His subsequent course has not been publicized, so we assume he did not die.

2. A history of three significant cerebral concussions. By significant we mean a concussion which has produced any of the following:
 a. Definite and documented unconsciousness.
 b. Neurological sequelae even without unconsciousness, usually transient diplopia.
 c. Retrograde amnesia for events occurring prior to the head injury.
 d. Amnesia for events occurring more than five minutes after the head injury.

 Explanation:

 Our reasoning in regard to *concussion* is that those severe enough to produce any of the above symptoms or signs are also severe enough to have produced cerebral edema and/or petechial hemorrhages of the brain, the residual of which cannot be detected by neurological examination or by electroencephalograms until the central nervous system function is impaired. When damage which is undetectable and unmeasurable is known to have occurred, an arbitrary line has to be drawn somewhere. We draw the line at three, feeling that a well-coached player in good condition, wearing a properly fitted helmet and mouthpiece is not apt to suffer as many concussions, and those with three or more concussions have demonstrated a dangerous susceptibility, similar to a "glass jaw" in a boxer.

C. Any significant bleeding tendency such as hemophilia, pseudohemophilia, Christmas disease, etc.

D. Spine.

1. Arthritis.
2. Proven ruptured disc above L4-5 level.

E. Kidney disease producing reduced renal function or that which is apt to be aggravated by strenuous exercise.

II. The second group of conditions, those we regard as *Temporarily Disqualifying*. are as follows:

A. Acute infections.

1. Febrile illnesses, including "infectious mononucleosis" in acute phase (The spleen may be enlarging, but not yet palpable, as covered in II D below).
2. Skin infections in sites interfering with the proper wearing of football equipment.
3. Contagious disease: (E.g. Staph. skin lesions, Pediculosis, Impetigo).

B. Correctable defects: E.g.: Boys with hernias, inquinal or femoral, are disqualified until the hernia has been adequately repaired for three months. Our reasoning is that a blow to the groin in a boy who has an inquinal hernia containing a loop of bowel in the hernial sac could convert a simple herniorrhaphy into a bowel resection.

C. Jaundice or hepatomegaly from any cause.

D. Splenomegaly from any cause. If the splenomegaly is permanent the disqualification is permanent.

III. The third group of conditions are those *Requiring Individual Decision.*

A. Orthopedic conditions, especially previously damaged shoulders, elbows, knees and ankles. Our orthopedic consultants are intimately involved in these decisions. We almost always follow the advice of the orthopedic surgeon when we are satisfied he is aware of the protective devices and strapping techniques available as well as the traumatic possibilities. We prefer consultants who have a basic sympathy for the boy's desire to play football. We have to satisfy ourselves the participant is not unduly susceptible to further damage that might be irreparable.

B. Epilepsy. There are probably a few epileptics who can safely engage in "collision sports." Those with petit mal or psychomotor seizures ordinarily cannot be controlled well enough by medication to participate, especially with the hyperventilation involved. Boys with Jacksonian seizures are all disqualified. A boy with a history of grand mal seizures who, under medication, has had no seizures for a period of years, and whose workup has been adequate to establish a definite diagnosis of idiopathic grand mal epilepsy, might, conceivably be allowed to play. We have learned to be very cautious here, since the one supposedly idiopathic grand mal epileptic we have allowed to play later was shown to have Jacksonian seizures. It is essential that the coaches know of this condition in the event a seizure occurs when the regular team physician is not available.

C. Diabetes. If a diabetic is emotionally stable and cooperative, has an excellent understanding of the relationship of exercise to his diet and insulin requirements, and is not a "brittle" diabetic, he might be allowed to play football. This problem has never presented itself here, probably because most diabetics have not participated in high school.

D. Cardiovascular disease. In some cases the decision is so obvious that the team physician can disqualify the candidate on the spot. E.g.: Mitral stenosis, aortic stenosis and/or insufficiency, coarctation of the aorta, cyanotic heart disease of any type, carditis (rheumatic or other) within three months, previous cardiac surgery for any acquired or congenital heart disease (except patent ductus arteriosus, successfully repaired and subsequently asymptomatic), significant cardiac arrhythmias. In doubtful cases, the boy deserves and is given a complete workup by an internist and/or cardiologist whose findings and advice are taken into consideration in making our

decision. If a boy has a blood pressure consistently above 140/90 on repeated examinations he is not allowed to participate, but rather is put under medical study and care for his hypertension.

E. Spinal conditions. A boy with a spina bifida occulta or spondylolysis without spondylolisthesis who has played football in high school without symptoms might be allowed to play here. If the condition has been symptomatic or if there is x-ray evidence of spondylolisthesis he is disqualified. A boy with a proven ruptured disc at L4-5 or L5-S1 will not ordinarily be a candidate because of the pain, but might be allowed to play if the trouble was remote and he is currently (at least three months) asymptomatic, free of neurological signs, and cooperative in maintaining his muscle tone. Those who have had a disc excised, with or without a fusion, would be considered in the light of the actual surgical procedure done and the opinion of the operating surgeon.

IV. There are certainly *Rare Diseases* or *Unusual Conditions* not previously covered in which the decision to disqualify is obvious. When in doubt, we approach the decision with the philosophy that football offers its participants something uniquely worthwhile, but that death or crippling injury are not only disastrous to the boy, but hurt the entire sport.

We have a final word of warning. Sooner or later some bright football coach, parent, or even family physician will come up with the argument that the psychological damage you perpetrate on a boy by not allowing him to play is more serious than any physical damage he could possibly incur on the football field. If the team physician "falls for" this one, he has completely misunderstood his responsibility to the individual, the team and the sport. Our *responsibility* is to make a considered, factual decision and to stand behind our convictions.

Dr. Clement, 77 Essex St., Bangor 04401
Dr. Graves, Sunset Dr., Orono 04473
Dr. Lane, 3 Cedarwood St., Orono 04473
Dr. Weisz, 17 Sunrise Terr., Orono 04473

The Story of the Chamberlain Debt

A true story*

In the year 1817, about three years before the Province of Maine separated from the Commonwealth of Massachusetts and became the State of Maine and the 23rd state of the Union, a young doctor by the name of Leander Gage set up practice as a physician and surgeon in the small town of Waterford – a town in Oxford County about 50 miles northwest of Portland. It was then, as now, a small town set in a farming community, surrounded by beautiful lakes and hills, in a wide and, in winter, rather inhospitable region. The inhabitants were honest, hard-working, God-fearing people, of fine old New England stock.

Dr. Gage became the typical country doctor of his day, having a wide and successful practice. In summer he drove his doctor's chaise around the countryside, but in winter and spring was compelled oftentimes to visit his patients on horseback – the only way to get over the back country roads of his day. He was at once doctor, surgeon, oculist, dentist, nurse, counsellor, friend and priest to the inhabitants not only of his own town but of the neighboring towns – in fact, the "beloved physician" of the entire countryside.

Among his patients was one Phebe Haskins, a double first cousin of Ralph Waldo Emerson, who married John Chamberlain, also of a pioneer family. They lived for many years in Waterford. Their son Charles Moody Chamberlain was born in 1841, before the family moved away.

In 1842 Leander Gage died, when only 50 years old, literally worn out by his many cares. His widow had to sell the homestead which Dr. Gage had built on a hill overlooking the village and which had been their happy home for 20 years. – His 8 children scattered to various parts of the country.

In 1921, over a hundred years after Dr. Leander Gage first set up practice in the little town of Waterford, Maine, his grandson, Dr. Homer Gage, in Worcester, Massachusetts, one day received by registered mail, the following letter:

"Maspeth, L. I., May 9th 1921

Dr. Homer Gage;
Dear Sir:—

When a boy, back in 1855 I heard my Father expressing regret that he had been unable to pay Dr. Gage who had been our family Physician $75.00 that he owed him when he left Waterford. Father died on October 4th, 1856. At the time I heard this I determined in my own mind if I ever became able I would pay the amount. For years I never made much more than a living, but some 3 years ago money began to come from a fortunate investment. . . .

*This story was submitted to the Journal by Mrs. Albert W. Rice whose husband compiled the article from family records. Mrs. Rice is the great-granddaughter of Dr. Leander Gage.

Visiting my old native town last year put me strongly in mind of my resolution. Now I trust you will think with me – better late than never, and distribute the amount among the heirs of Dr. Leander Gage, and oblige,

Yours truly,
Chas. M. Chamberlain"

Enclosed was a check for $432.75, being the $75. debt which John Chamberlain had been unable to pay, together with 79 years' interest at 6%!

Dr. Homer Gage, to put it mildly, was completely flabbergasted. Charles M. Chamberlain meant nothing to him, nor had he ever heard of such a debt. He immediately took the matter up with his brother, T. Hovey Gage, who was equally astonished.

It so happened that the old house in Waterford had come back into the Gage family, and the original account books kept by Dr. Leander had been brought back and were again in their accustomed place. Mr. Gage promptly examined them, and sure enough – the entries in the Ledger under the name of John Chamberlain showed that there was still a debt remaining unpaid at the time of the doctor's death – but certain credits for services rendered had reduced it slightly below the principal amount of $75. mentioned in Mr. Chamberlain's letter.

The interest was re-calculated in the light of these old entries and the overpayment returned to Mr. Chamberlain. Of course Dr. Homer Gage and Mr. T. Hovey Gage were most reluctant to take their shares, but Mr. Chamberlain insisted, and this was the way he put it:

> "Please accept my thanks for your kindness in ascertaining and fixing the exact amount of the account, but I rather that you and your Brother should keep that that belongs to you."

All in all a "remarkable example of New England integrity and filial loyalty," as Mr. Gage so aptly put it.

So the sum of $338.92 was on June 18, 1921 duly distributed to 13 grandchildren and great-grandchildren of Dr. Leander Gage in amounts ranging from $9.42 to $42.36.

The letters which Mr. Chamberlain received from the various heirs must have made him happy and proud in his old age. As one old lady expressed it, "it is the most wonderful example of honor in real life that I ever knew of."

One more episode and I am done –

In the office of the Maine Medical Association at Brunswick, Maine, there is a mahogany desk with a small brass plate bearing this inscription:

In
1921
Charles M. Chamberlain
a native of Waterford, Maine
sent to the heirs of
Dr. Leander Gage
payment for medical services
rendered before
1842

* * * *

In honor of his act
Three Grandchildren of Dr. Gage
Presented to the
Maine Medical Association
this desk purchased with their
share of the sum sent.

When the President, Dr. Addison Thayer, accepted this desk for the Maine Medical Association, he told the story, and bade the members – cheer up, and worry no more if they couldn't collect their debts, for in another century their grandchildren would!

4 Military Rd., Worcester, Massachusetts 01609

Computerized Bibliographic Service Now Available To New England Medical Community

The Francis A. Countway Library of Medicine (the Boston Medical Library and Harvard Medical Library) is now ready to accept requests from members of the New England medical community for literature searches by computer – known in library circles as MEDLARS (Medical Literature Analysis and Retrieval System), according to Ralph T. Esterquest, Librarian.

Since May 1966 the Countway has been serving as the New England Regional Search Center of MEDLARS. The central office of MEDLARS is in the National Library of Medicine in Bethesda, Maryland. The Countway is one of five medical libraries in the country designated as a regional search center.

"Having come through a successful test period," Mr. Esterquest stated, "we feel confident that we can now deliver bibliographies of periodical articles with reasonable speed."

This is how MEDLARS works.

A physician wanting to read the latest information on angiosarcoma (for example) writes or calls MEDLARS REGIONAL SEARCH CENTER (NEW ENGLAND), Francis A. Countway Library of Medicine, 10 Shattuck Street, Boston, Mass. (Tel: 617-734-3300, Ext. 109). He describes his subject as precisely as he can. The Search Center "formulates" the question in accordance with the nomenclature of the MEDLARS system. It goes through the computer, and in due course a typed, tailormade bibliography of periodical articles is machine-produced and sent to the inquiring physician.

The store of literature to which the system has access to are the periodical articles that have been included in *Index Medicus* since January 1964. At present it takes from three to five weeks to deliver the product bibliography to the requesting individual. "It is anticipated that this time will be speeded up as we get practice and experience," Mr. Esterquest stated.

Any practicing physician in New England is eligible to request a search. There is no cost to the physician for this service.

DEAN H. FISHER, M.D.
COMMISSIONER

State Of Maine

Department of Health and Welfare

The Renting of Durable Medical Equipment

In this issue of The Journal, we are enclosing our rules and regulations concerning the renting of durable medical equipment. There are many items in this group which it might seem would be cheaper to buy outright than to rent, but because of the complexities and expense of computer programming, it is cheaper in the end to rent the equipment.

TO: Rentors of Durable Medical Equipment

The Maine Department of Health and Welfare will honor bills submitted for rental of durable medical equipment to any recipient of public assistance (Old Age Assistance, Aid to the Disabled, Aid to the Blind, Aid to Families with Dependent Children) in the following instances:

a. The respective piece of durable medical equipment was ordered by a licensed medical doctor or osteopath. A copy of the physician's written order must accompany the initial billing on each recipient.
b. You, as the rentor, have signed and filed with this Department a Civil Rights Compliance Statement. Two copies are enclosed; you should sign and return one immediately, the other is for your files.

Durable medical equipment is defined for purposes of this Title XIX program correspondingly to Title XVIII: "Durable medical equipment is equipment which can stand repeated use. It includes, for example, such items as iron lungs, oxygen tents, hospital beds, wheelchairs, and other ambulation devices such as crutches and walkers. It must be for use in the patient's home or in a place used as his home. . . ." We will also pay for necessary repairs to durable medical equipment already owned by the recipient when repairs are made by a competent person.

Billing Procedures

Public assistance recipients age 65 and over –

Bill the fiscal intermediary for Part B. (Union Mutual Life Insurance Company) of Title XVIII as you would for any other person age 65 and over, only indicate on the billing form that the person is a public assistance recipient. You should obtain information regarding the receipt of public assistance directly from the patient or his family. Bill on appropriate Social Security form. Union Mutual will reimburse you in our behalf for any portion of the bill chargeable to this Department.

Public assistance recipients under age 65 –

Complete one of the enclosed forms (G-49) and forward it for payment to address listed on lower part of form. The physician's statement should accompany this bill as indicated above. These recipients have an Identification Card to indicate their receipt of public assistance. This card cannot be accepted as final commitment by the Department for payment because of changes in case status, but should be accepted for billing purposes. We will notify you very shortly if the person is not currently a public assistance recipient. Reimbursement will be a "reasonable charge" rate as is true of Title XVIII of Medicare, Part B.

Purchase of Expendable Medical Equipment or Supplies

There are a limited number of expendable items for which the State will reimburse a one-time "reasonable charge." In general, these are items which are nontransferable and of minimal cost. If medically recommended such items could be bedpans, urinals or urinal devices. Billing procedures to be followed are outlined above. The bill should be accompanied by a physician's written order.

Because many of you who handle the rental of such equipment are also retailers of prescription drugs, we take this opportunity to inform you that our Department will not reimburse for any prescription drugs at the present time. The limited drugs reimbursable under this program are those administered to a recipient while at the hospital either as a patient or during treatment in the emergency room or out-patient clinic; also those administered by a licensed physician (those drugs which cannot be self-administered).

The Journal of the Maine Medical Association

DANIEL F. HANLEY, M.D., Brunswick, Editor

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Across The Desk

Dr. Hudson Asks Physicians To Watch Prescription Costs

A suggestion that doctors keep an eye on drug costs in behalf of their patients was made by AMA president Dr. Charles Hudson before a meeting of the Pharmaceutical Manufacturers Association. Doctors should identify 15 or 20 of the drugs they prescribe most often, identify the brands of each drug in which they have the most confidence, and find out what the various brands cost the patient, he said. The implication was that physicians could then bear prices in mind when they prescribe.

The AMA president also suggested that doctors determine whether they can save money for patients who are on long-term drug therapy by prescribing in larger quantities. Doctors should recognize that they are the principal purchasing agents of health care for their patients, Hudson said. – *Washington Report on the Medical Sciences,* April 3, 1967, No. 1031.

AHA Warns Of Medicare Withdrawal

In Washington, Mr. Kenneth Williams, Director of American Hospital Association's Service Bureau was reported to have warned that AHA's 6,700 hospitals may end their medicare agreements this summer. According to a UPI story, Williams said that a survey of members revealed that medicare's reimbursement to hospitals was considered to be "grossly inadequate," and that hospitals were having to pass on to other paying groups the costs of deficiencies in medicare's reimbursement. Unless the government pays a higher percentage of patient costs, said Williams, many community hospitals may have to withdraw from medicare. He went on to suggest that the law be amended so that hospitals could "look to the old people to pay the bills, then let them collect from the government," or permit hospitals to bill the elderly for any differences in the cost of treatment which is not covered by the government's payments . . . Williams estimated that medicare patients occupy more than 30% of the Nation's hospital beds. – Legislative Roundup, May 5, 1967, Vol. VIII.

VA's New Procedure on Outpatient Treatment

On July 1, 1967 the Veterans Administration will inaugurate a simplified procedure for authorizing outpatient treatment. Eligible veterans will receive an Outpatient Medical Treatment Identification Card on which will be recorded the condition(s) for which treatment may be provided. This card, when presented to a physician of the veteran's choice, is all the authorization a physician needs to treat the veteran. A thirty ($30.00) dollar per month limitation is placed upon fees.

The physician may bill the Veterans Administration on his own stationery for fees normally charged the general public. They will be paid to the extent that they do not exceed the maximum rates established by the Fee Schedule now in effect with the Maine Medical Association. Payment will be expedited if the physician includes the following on his itemized statement:

a. Veteran's name
b. His claim number
c. The service-connected condition(s) treated
d. The specific service(s) rendered and date(s)
e. Fee charged

A treatment report is necessary only when the cost of urgent medical services temporarily exceeds the thirty dollar limitation or when the service-connected condition(s) has significantly changed.

Prescriptions should be brought or mailed by the veteran to the Veterans Administration for filling when they are of a recurring nature. They may be written for a month's supply and may be refilled, at the physician's request, up to five times. Where medication is needed immediately, the physician may write a prescription for up to a ten-day's supply for filling in a local pharmacy and an additional supply should be obtained from the Veterans Administration. On the prescription filled locally should be written: "The VA has authorized me to treat the disability for which this prescription is written."

Senate To Clear Draft Bill

The Senate is expected to conclude its debate and pass S. 1432, the Selective Service Act of 1967, before it concludes its business. In addition to providing a four-year extension of the present regular Selective Service System, it would also extend for four years the doctor draft with its special pay provisions for doctors and dentists serving in the Armed Forces. . . . The bill changes the existing program to the extent that physicians, dentists, and individuals in other allied health categories would be required to register and be subject to call up to age 35. This provision will primarily affect foreign physicians who enter this country with the intention of taking up residency and who are 26 years of age and older. . . . The House Armed Services Committee was scheduled to complete, yesterday, its informational hearings on the Selective Service System. – Legislative Roundup, May 12, 1967, Vol. VII

Does FDA Stretch a Point?

Washington, D.C. – Charging "gross inaccuracies" in a much-publicized Food and Drug Administration survey of prescription drug potency, C. Joseph Stetler, president of the Pharmaceutical Manufacturers Association, demanded that the agency "repudiate the survey outright."

Stetler said that "not only the public, but at least four U.S. Senators, several newspapers and the author of a new book about drugs have been misled by the faulty study."

At issue is a survey announced last June 8 by the Commissioner of Food and Drugs. At that time the Commissioner said that his agency had "collected almost 4,200 drug samples" and that "7.6 percent of them deviated to a material extent from declared potency. . . . On the average, then, we have to conclude that one out of every 14 drug units manufactured is violative just on potency alone."

Stetler said 49 of PMA's 138 member firms were involved in the FDA's allegations. He said that 40 of them, who responded to an association survey, analysed their allegedly violative products, finding that only one percent deviated from acceptable potency limits. In a number of instances, Stetler added, the company findings have been confirmed by independent laboratories.

He said four PMA member companies have received letters from FDA in which the agency admitted it was wrong in charging violations concerning their products.

"Public charges followed months later by private apologies scarcely seem appropriate or sufficient. FDA should repudiate the survey outright or conduct an accurate analysis of the samples in question," he declared.

Stetler distributed excerpts from FDA statements concerning the survey, along with copies of five letters PMA directed to the agency between August, 1966, and May, 1967, requesting details of the survey and expressing the hope "that mutual efforts can be put forth by the industry and the Food and Drug Administration to raise the level of quality of the drug supply as high as possible."

"We might expect," said Stetler, "that FDA would at the very least have notified the manufacturers of allegedly deficient drug products so that corrective action could be taken. Yet this was not generally done.

"We might also expect that the laboratory work in support of FDA's very grave conclusions would be accurate. Yet gross inaccuracies by FDA are revealed in the subsequent reanalyses by the companies themselves. FDA's work has been found incorrect – and the product potencies found to be within allowable limits – in at least 80 of 94 violations alleged against 40 of our members."

The industry spokesman said he wished to make clear the drug companies' view that no quantity of subpotent drug products, no matter how small, should be on the market. "This point was made clearly in our correspondence with FDA ever since last summer," he said.

"FDA's failure promptly to notify the companies involved indicates the survey has been utilized as a vehicle for an unwarranted attack on the prescription drug industry, rather than as a basis for working with producers to correct possible deficiencies. As such, it has offended rather than served the public interest," he declared.

"Once before, in connection with alleged drug advertising violations, an investigation by our association proved that FDA was unfairly indicting the pharmaceutical industry. At that time I raised a question which is worth repeating now:

"'Isn't it fair to require that an agency which demands the truth deliver the truth?'

"Among others," Stetler said, "who were misled by FDA's drug potency statistics were Senators Hart, Montoya, Nelson and Russell Long, all of whom have referred to it from time to time in connection with pending legislative proposals or hearings." – Pharmaceutical Manufacturers Association News Release

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Necrology

H. Danforth Ross, M.D.

1886-1967

H. Danforth Ross, M.D., 80, of Sanford, Maine died on April 28, 1967. He was born on May 21, 1886 in Phillips, Maine, son of Raymond and Xarissa Ross.

He graduated from Phillips High School and received his medical degree from Bowdoin Medical School in 1913. Dr. Ross did postgraduate work at the Boston Lying-In Hospital and served his internship at the Salem Hospital in Massachusetts from 1913 to 1914.

Dr. Ross practiced in New Hampshire for three years where he operated a private hospital and then moved to Sanford in 1917. Assisted by Mrs. Ross, formerly an operating room supervisor at Salem Hospital, he started this community's first hospital which he and his associate, Stephen A. Cobb, M.D. operated from 1918 until the Henrietta D. Goodall Hospital opened in 1928. Dr. Ross had served on the staff and as president of the Henrietta D. Goodall Hospital.

He was an Honorary member of the York County Medical Society and the Maine Medical Association, having received a 50-year pin in 1963. He was also a member of the American Medical Association. Dr. Ross was the last surviving charter member of the Sanford-Springvale Rotary Club and served as president from 1933 to 1934 and was also a long time member of the Elks and a 50-year member of the Unity Lodge, AF & AM in Union, New Hampshire.

In 1961 the honorary doctor of humane letters degree was conferred on him by Nasson College. In September 1966 some 1,000 citizens turned out to honor him on "Dr. Ross Day." Approximately a third of those attending were "Dr. Ross babies."

Surviving are his widow, the former Edith Leonard; a daughter, Mrs. Roderick McNeill of Westwood, Massachusetts; a sister, Mrs. Vena Morse of St. Petersburg, Florida and three grandsons.

County Society Notes

LINCOLN-SAGADAHOC

A meeting of the Lincoln-Sagadahoc County Medical Society held at The Ledges in Wiscasset, Maine on April 18, 1967 was called to order by the President, Charles E. Burden, M.D.

Mr. Oscar E. Webb of Boothbay spoke on Keogh-type retirement income plans. Mr. George Pierce of Depositors Trust Company spoke on trust funds as related to the Keogh-Smathers Bill.

George W. Bostwick, M.D. outlined the proceedings of the Interim Meeting of the M.M.A. House of Delegates on April 9, 1967 and asked for Society instructions to the delegates on: 1) a resolution opposing proposed federal legislation requiring prescription of drugs under federal aid programs by generic names (this was advocated unanimously and the delegates so instructed); 2) whether the annual contribution to the Maine Medical Education Foundation should be a contribution or an assessment (the delegates were unanimously instructed to vote for an assessment; and 3) the proposed budget of $78,600 for the M.M.A. fiscal year 1/1/68-12/31/68 (the delegates were unanimously instructed to vote for this proposed budget.)

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Edward K. Morse, M.D. of Rockland, Councilor, spoke appreciatively of Dr. Hanley's services to the M.M.A. and discussed other business to come before the June meeting of the House of Delegates. He also mentioned that there has been appointed a committee to review malpractice insurance contracts.

GEORGE W. BOSTWICK, M.D., *Secretary*

KENNEBEC

The Kennebec County Medical Association met at the Veterans Administration Center in Togus, Maine on April 20, 1967.

The meeting was called to order by the President, Robert L. Ohler, M.D.

A proposed medical-legal cooperation agreement between the Maine State Bar Association and the Maine Medical Association was read to the members. Allan J. Stinchfield, M.D. proposed that the Association go on record as generally approving the above agreement with the proviso that it may be changed for further study. This was seconded and approved.

Paul H. Pfeiffer, M.D., Delegate to the AMA, discussed the AMA disability insurance policy and expressed the opinion that a revised premium fee schedule was in order.

Alta Ashley, M.D. of Augusta and Charles H. Okey, Ph.D., Director of the Public Health Laboratory, State of Maine Department of Health and Welfare, Augusta, discussed the clinical and laboratory aspects of syphilis control and of the treatment of gonorrhea. Dr. Okey also stated that the laboratory was doing antibody tests from rubella.

LUCIEN F. VEILLEUX, M.D., *Secretary*

CUMBERLAND

Sixty-five members and guests attended the meeting of the Cumberland County Medical Society which was held at the Holiday Inn in Portland, Maine on April 20, 1967.

Following a social hour and dinner, William L. MacVane, Jr., M.D., Program Chairman, introduced a panel discussion devoted to "The Physician and the News Media" with the participants being Messrs. Roger Williams, Larry Geraghty, William Langzettel, John Murphy, Ken Morrison and Ralph Lancaster. Many facts and ideas were presented, the majority of which were not completely accepted by either the panel or the audience. It was agreed that the secretary would obtain from the AMA copies of *Guidelines for Physicians in their relations with the Communications Media* for distribution to the membership in order to clarify for the Society the opinions of the Judicial Council of the AMA regarding press-physician relationship.

Alvin A. Morrison, M.D. reported on the Interim Meeting of the M.M.A. House of Delegates.

The President, Charles W. Capron, M.D., described his meeting in behalf of the Society with the persons planning the Model Cities application for the City of Portland.

STANLEY B. SYLVESTER, M.D., *Secretary*

New Members

HANCOCK

John G. Murray, Jr., M.D., Blue Hill Mem. Hosp., Blue Hill 04614

Channing H. Washburn, M.D., Maine Maritime Academy, Castine 04421

Richard W. Britt, M.D., Blue Hill 04614

Tandearil®
oxyphenbutazone

Therapeutic Effects: Tandearil is a nonhormonal compound which may rapidly resolve inflammation and help restore normal joint function. Its action does not affect pituitary-adrenal function or impair immune responses. Its value in osteoarthritis is especially noteworthy because this disorder responds inconsistently to steroids and is often resistant to salicylates. Further, indomethacin is limited only to osteoarthritis of the hip, whereas oxyphenbutazone is effective in all forms of the disease.

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal,hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should be closely supervised and should be warned to report immediately fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage. Make regular blood counts. Discontinue the drug and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The most common are nausea, edema and drug rash. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. Infrequently, agranulocytosis, or a generalized allergic reaction may occur and require withdrawal of medication. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported but cannot definitely be attributed to the drug. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

Dosage in Osteoarthritis: The initial daily dosage in adults is 300-600 mg. in divided daily doses. When improvement occurs, dosage should be decreased to the minimum effective level; this should not exceed 400 mg daily, and is often achieved with only 100-200 mg. daily.

For complete details, please refer to full prescribing information. 6562-VI(B)R

Availability: Tablets of 100 mg.

Geigy

Geigy Pharmaceuticals
Division of Geigy Chemical Corporation
Ardsley, New York

Geigy

Tandearil®
oxyphenbutazone

helps osteoarthritic joints move again



3 out of 4 osteoarthritics completely or markedly improved

Sperling, I L.: 3 Years' Experience with Oxyphenbutazone in the Treatment of Rheumatic Disorders, Applied Therapeutics 6:117, 1964.	76.9% of 407 patients
Watts, T W., Jr.: Treatment of Rheumatoid Disorders with Oxyphenbutazone, Clin. Med. 73:65, 1966.	84.6% of 39 patients

Please see adjoining page for brief prescribing summary

TA-4919 PC

Why these 7 patients with moderate to severe anxiety may respond better to Mellaril



1. The agitated patient.
Anxiety—particularly that beyond t range of minor tranquilizers—fr quently is expressed as gross mot restlessness, fidgetiness and purpos less movements, and may erupt in aggressive behavior. Mellaril is most a specific for those patien whose anxiety follows such a patter



. The psychosomatic patient.

he family physician is rarely given ıe diagnostic luxury of a classic, extbook "anxiety state." Most often e must probe for anxiety masked by functional disorder—or which exac-bates a somatic problem. Double-ind evaluations have demonstrated ıat Mellaril can be a significant ad-nct in the treatment of such patients.



The patient under s uational stress.

Mellaril helps the patient deal with ses of everyday life. Nonhabitu-, it can be given for extended pe- of time. It does not "separate" patient from practical problems pressures, does not induce eupho-r a fuzziness which can compro-se the ability to cope with reali-es. Rather, it helps the patient move more competently in his daily world by eliminating use-less tension, by allowing him to conserve emotional resources and energies, and to direct them against the problems really worth worrying about.



4. The menopausal patient.

The woman who sees change of life as the end of useful life requires support from both family and family physician. Whether the psychological impact of menopause is directly related to hormonal changes, or merely coincidental, is debatable, but estrogenic therapy is frequently inadequate. Mellaril is a useful aid for these patients and, alone, or in combination with reduced estrogen dosage, will help ease the menopausal misery.



5. The previously hospitalized psychiatric patient.

Such a patient may still require the type of medication he has been accustomed to, but because he is no longer in a controlled setting the acceptable level of adverse reactions must be lower. In such circumstances Mellaril is perhaps the drug of choice.



6. The agitated geriatric.

Tranquilizer therapy in the elderly patient always involves special (or at least accentuated) problems: the possibility of drug-induced ataxia, hypotension or depression, for example, assumes an additional significance. These reactions have rarely been observed in geriatric patients treated with Mellaril.



7. The constantly returning patient.

The anxiety patient who has not responded to a minor tranquilizer is not very likely to benefit from your minor tranquilizer of second choice. A major tranquilizer, such as Mellaril, may be indicated in such patients.

Contraindications: Severely depressed or comatose states from any cause, and in association with or following MAO inhibitors; severe hypertensive or hypotensive heart disease.
Precautions: Hypersensitivity reactions (e.g., leukopenia, agranulocytosis) and convulsive seizures are infrequent. Pigmentary retinopathy has been observed where doses in excess of those recommended were used for long periods of time. May potentiate central nervous system depressants, atropine, and phosphorus insecticides. Where complete mental alertness is required, administer the drug cautiously and increase dosage gradually. In addition, orthostatic hypotension (especially in female patients) has been observed. Epinephrine should be avoided in treatment of drug-induced hypotension.
Side Effects: Pseudoparkinsonism and other extrapyramidal disorders are infrequent; drowsiness, especially in high doses early in treatment, may occur; nocturnal confusion, dryness of the mouth, nasal stuffiness, headache, peripheral edema, lactation, galactorrhea, and inhibition of ejaculation are noted on occasion; photosensitivity and other allergic skin reactions may occur but are extremely rare.
Before prescribing, see package insert for full product information.

in moderate to severe anxiety, 25 mg. t.i.d.

Mellaril®
(thioridazine)

SANDOZ


Bartholin's gland
Periurethral glands
Cervical glands
Flagyl®.....
brand of
metronidazole
Seminal vesicles
Bladder
Prostate gland

Destroys
Trichomonads
Wherever
They Are

Flagyl seeks out the sites where trichomonads hide. Only a systemic agent can. Flagyl does, selectively and effectively.

Flagyl destroys trichomonads in the inner crypts, glands and cavities of the genitourinary tract in both women and men. Consequently, Flagyl is capable not only of curing trichomoniasis in women but also of preventing reinfection.

Correctly used, with due attention to repeat courses of treatment for resistant, deep-seated invasion and to the presumption of reinfection from male consorts, Flagyl has repeatedly produced up to 100 per cent cure in large series of patients.

When the diagnosis of trichomoniasis is positive, Flagyl is positive.

Dosage and Administration – In *women:* one 250-mg. oral tablet three times daily for ten days. A vaginal insert of 500 mg. is available for local therapy when desired. When used, one vaginal insert should be placed high in the vaginal vault each day for ten days; concurrently two oral tablets should be taken daily.
In *men* in whom trichomonads have been demonstrated: one 250-mg. oral tablet twice daily for ten days.

Contraindications – Pregnancy; disease of the central nervous system; evidence or history of blood dyscrasia.

Precaution—Complete blood cell counts should be made before, during and after therapy, especially if a second course is necessary.

Side Effects—Infrequent and minor side effects include nausea, metallic taste, furry tongue and headache. Other effects, all reported in an incidence of less than 1 per cent, are diarrhea, dizziness, vaginal dryness and burning, dry mouth, rash, urticaria, gastritis, drowsiness, insomnia, pruritus, sore tongue, darkened urine, anorexia, vomiting, epigastric distress, dysuria, depression, vertigo, incoordination, ataxia, abdominal cramping, constipation, stomatitis, numbness of an extremity, joint pains, confusion, irritability, weakness, flushing, cystitis, pelvic pressure, dyspareunia, fever, polyuria, incontinence, decreased libido, nasal congestion, proctitis and pyuria. Elimination of trichomonads may aggravate candidiasis.

SEARLE *Research in the Service of Medicine*

Did Dorothy Larson show you her ankles in private? Now she shows them in public.

Your office examination would have confirmed that Mrs. Larson was up to her knees in edema. Her heart was beginning to fail. And her ankles had disappeared under an inch of salty water.

Along with digitalis, you might have prescribed Hygroton. To get rid of the edema. And to keep it from coming back. And you prescribe Hygroton the same way you usually prescribe digitalis: just once a day.

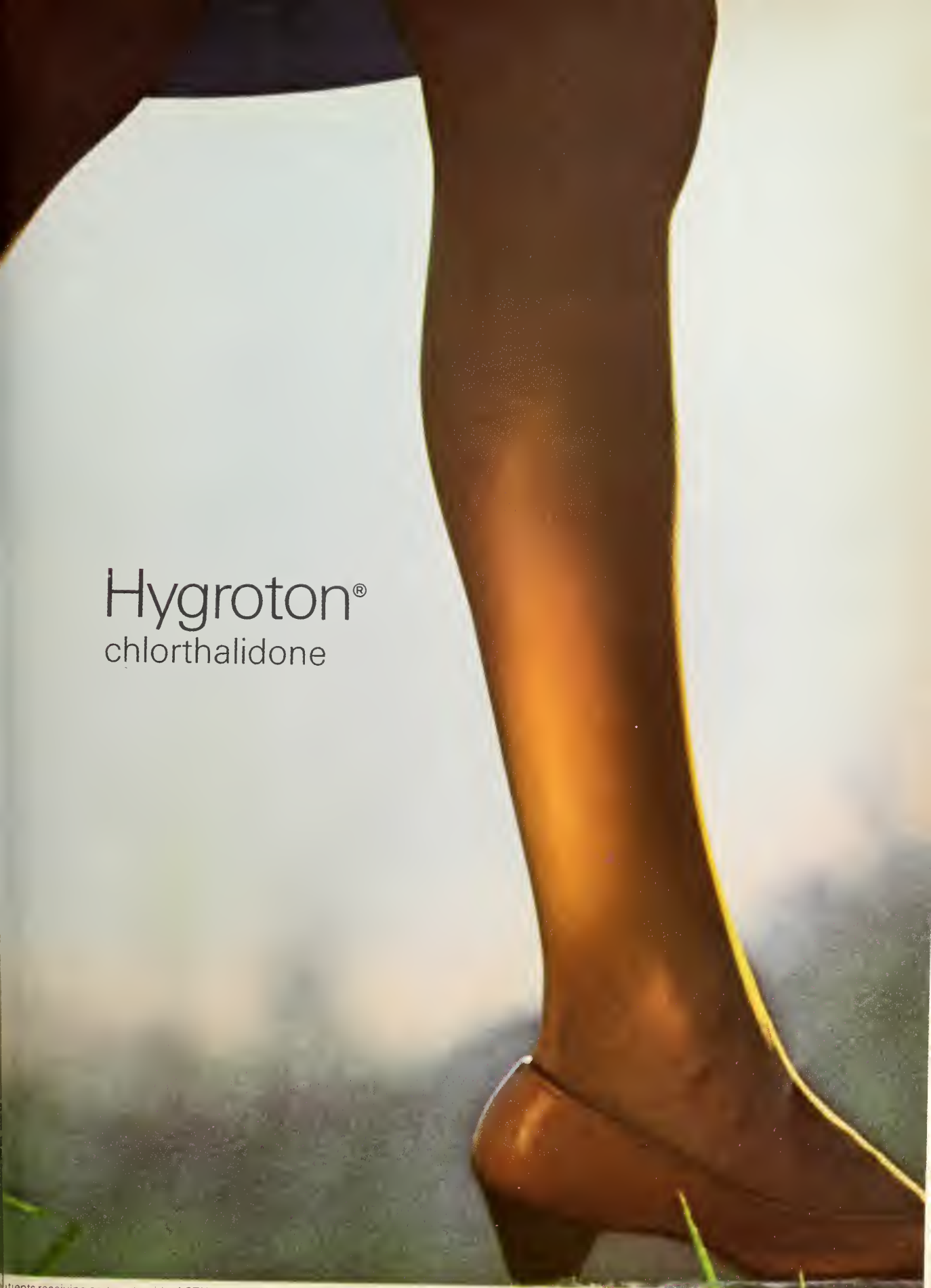
Tablet for tablet, Hygroton is just about the most effective diuretic going. And it costs a fraction of what Mrs. Larson would have to spend for equivalent therapy with short-acting diuretics.

In fact, Hygroton is an awfully nice way to treat the Mrs. Larsons in your practice. Just tell them you can get their ankles back at half price.



Indications: Hypertension and many types of edema involving retention of salt and water.
Contraindications: Hypersensitivity and most cases of severe renal or hepatic disease.

Warning: With administration of enteric-coated potassium supplements, the possibility of small bowel lesions should be kept in mind.
Precautions: Reduce dosage of concomitant antihypertensive agents by at least one-half. Discontinue BUN rises or liver dysfunction is aggravated. Ele imbalance and potassium depletion may occur; t special care in cirrhosis or severe ischemic heart



Hygroton®
chlorthalidone

ıtients receiving corticosteroids, ACTH, or digi-
t restriction is not recommended.
cts: Dizziness, weakness, nausea, vomiting,
ɔemia, hyperuricemia, headache, muscle cramps,
postural hypotension, constipation, leukopenia, thrombocytopenia, agranulocytosis, impotence, dysuria, transient myopia, skin reactions, including urticaria and purpura, epigastric pain, or G.I. symptoms after prolonged administration.

Average Dosage One tablet (100 mg.) with breakfast daily or every other day.

Availability: Tablets of 100 mg.

6524-V(B)

For full details, see prescribing information.

...so you might say Hygroton is good public relations for Mrs. Larson

Because it gets her *out* in public in the first place. At 43, Mrs. Larson worries about appearances and swollen ankles don't help.

But Hygroton's cosmetic effect is only half the story. Hygroton and digitalis therapy helps her get back in the swing of things. Gives her a second wind. Gets rid of the extra pillow she needed for a good night's sleep. Now she even likes to take walks. Just for the fun of it!

When her troubles began, Mrs. Larson thought they were the signs of the change of life. It's a change all right, but one you can treat. And you can count on Hygroton to help keep her in public instead of in the hospital.

See preceding pages for brief summary of prescribing information.



Geigy

Geigy Pharmaceuticals
Division of Geigy Chemical Corporation
Ardsley, New York

Program

114th Annual Session

Maine Medical Association

June 11. 12. 13. 1967

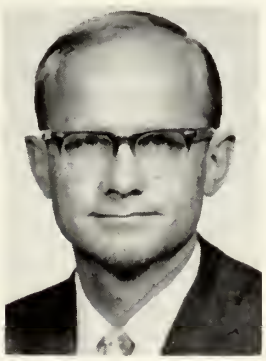
The Samoset. Rockland

Arranged by the Scientific Committee

CLEMENT A. HIEBERT, M.D., Portland
Chairman

WALDO A. CLAPP, M.D., Lewiston

MERLE S. BACASTOW, M.D., Portland



Dr. Hiebert

Sponsors:

The Scientific Program for the annual session of the Maine Medical Association in cooperation with the Technical Exhibitors and the Council of the Maine Medical Association is made possible this year by grants from:

Eli Lilly and Company State Medical Convention Program
Indianapolis, Indiana

Merck Sharp & Dohme Postgraduate Program
West Point, Pennsylvania

For this cooperation and support, the members of the Scientific Committee are grateful.

Registration:

Registration throughout the session will be in the Lobby at The Samoset. Registration fee $1.00.

Sunday	June 11 — 9:00 A.M. to 5:30 P.M.
Monday	June 12 — 9:00 A.M. to 6:00 P.M.
Tuesday	June 13 — 9:00 A.M. to 4:30 P.M.

Telephone: The number at The Samoset is Rockland, 594-8411.

Visiting Delegates:

Introduction of Visiting Delegates will take place at meetings of the House of Delegates on Sunday, June 11 or at the General Assembly, Monday afternoon, June 12.

Scientific and Special Exhibits:

These exhibits are listed on page 138.

Technical Exhibits:

The forty-one companies that contribute to the program by participation in the Technical Exhibits are listed on pages 138 and 139. Please show your appreciation by visiting these exhibits which you will pass on your way through the Lobby en route to the Ballroom (where the Scientific Sessions will be held) to the Dining Room or to the Golf Course.

Sunday, June 11

9:30 A.M. First Meeting of the House of Delegates

Call to order: PAUL S. HILL, JR., M.D., President-elect

Presiding: Speaker of the House, ROBINSON L. BIDWELL, M.D.

Presentation of the A. H. Robins' Physician Award for Community Service

12:30 P.M. Luncheon

3:00 P.M. Second Meeting of the House of Delegates

6:30 P.M. Dinner

Monday, June 12

Scientific Program

9:00 A.M. to 12:00 NOON

Presiding – WALDO A. CLAPP, M.D.

Scientific speakers are sponsored in part by a grant from the Merck Sharp & Dohme Postgraduate Program.

9:00 A.M. **Film – The Underweight Newborn**
Discussion by PHILIP G. GOOD, M.D., Pediatrician, Portland

9:30 A.M. **The Overweight Adult**
DANIEL D. FEDERMAN, M.D., Assistant Dean, Harvard Medical School and Chief, Endocrine Unit, Massachusetts General Hospital, Boston, Massachusetts

10:30 A.M. **Shock**
ROBERT J. BAKER, M.D., Associate Director, Division of Surgery, Cook County Hospital and Clinical Professor of Surgery, The University of Illinois College of Medicine, Chicago, Illinois



Dr. Baker

12:00 NOON to 2:00 P.M. Luncheon

Scientific Program

1:30 to 4:00 P.M.

Presiding – CLEMENT A. HIEBERT, M.D.

Sponsored by the Maine Chapter, American College of Surgeons and the Maine Trauma Committee



Dr. Burke

1:30 P.M. Business Meeting, Maine Chapter, American College of Surgeons

1:45 P.M. **The Hospital, the Surgeon, and the Clean Wound**
JOHN F. BURKE, M.D., Assistant Clinical Professor in Surgery, Harvard Medical School and Associate Visiting Surgeon, Massachusetts General Hospital, Boston, Massachusetts

2:45 P.M. **Symposium – Thermal Trauma: New Methods in Management**

Speakers:

Parenteral Fluid Therapy in the Burned Patient
ROBERT J. BAKER, M.D., Chicago, Illinois

Burns and the Prevention of Sepsis
JOHN F. BURKE, M.D., Boston, Massachusetts

The Orthopedic Contributions to Burn Therapy
WILLIAM R. MACAUSLAND, JR., M.D., Instructor, Harvard Medical School and Associate Orthopedic Surgeon, Massachusetts General Hospital, Boston, Massachusetts

4:00 P.M. **General Assembly**

Presiding, GEORGE E. SULLIVAN, M.D., President

President's Address

Election of President-elect

6:00 to 7:00 P.M. Social Hour, Dutch Treat, Ballroom



Dr. Bean



Dr. Robertson



Dr. Schumacher



Mr. Miller



Dr. McBay

7:00 P.M. **Annual Banquet**

Introduction of Honorary Pin Recipients

Speaker: WILLIAM B. BEAN, M.D., Editor-in-Chief, *Current Medical Digest* and Professor of Medicine and Head of the Department of Internal Medicine, University Hospitals, The University of Iowa, Iowa City, Iowa

Subject: **Osler, the Myth and the Man**

Tuesday, June 13

Scientific Program

9:15 A.M. to 12:00 NOON

Presiding – MERLE S. BACASTOW, M.D.

Presented in cooperation with the Maine Chapter, American Academy of General Practice.

9:15 A.M. **Practice Today**

Panel – How We Do It

Moderator: GEORGE J. ROBERTSON, M.D., Medical Director, Bingham Associates Fund and Senior Physician in Internal Medicine, Tufts-New England Medical Center, Boston, Massachusetts

Panelists:

William H. Austin, M.D.	Richard A. Kemp, M.D.
Louis G. Bove, M.D.	Edward C. Matthews, M.D.
Carl A. Brinkman, M.D.	Harold L. Osher, M.D.
John A. Godsoe, M.D.	Hugh P. Robinson, M.D.
Douglas R. Hill, M.D.	George F. Sager, M.D.

Maurice Van Lonkhuyzen, M.D.

10:30 A.M. **Practice Tomorrow**

Mechanization of Medical Practice

DAVID C. MARSHALL, M.D., Medical Director, Sanders Associates, Inc., Nashua, New Hampshire

Private Practice in the Planned Medeconomy

MR. LEWIS A. MILLER, Editor, *Patient Care*, Stamford, Connecticut

12:00 NOON to 2:00 P.M. Luncheon

Scientific Program

2:00 P.M.

Presiding – CLEMENT A. HIEBERT, M.D.

Sponsored by the Maine Medico-Legal Society

Some of the Psychological Aspects of Suicide Determinations and Reporting

WILLIAM E. SCHUMACHER, M.D., Director, Bureau of Mental Health, State of Maine Department of Health and Welfare, Augusta, Maine

Scientific Investigation of Poisonings and Crime

ARTHUR J. MCBAY, Ph.D., Supervisor of Laboratory, Massachusetts Department of Public Safety and Associate Professor of Toxicology and Pharmacology, Boston University, Boston, Massachusetts

6:30 P.M. Lobster Bake

Presentation of Golf Prizes by

DANIEL R. SHIELDS, M.D., Lewiston, Chairman, Golf Tournament

Specialty Group Meetings

Monday, June 12

12:30 P.M. Section on Ophthalmology of the M.M.A.

Luncheon Meeting

Sponsored in part by a grant from the Merck Sharp & Dohme Postgraduate Program.

MAURICE VAN LONKHUYZEN, M.D., Portland, presiding

Ocular Cryosurgery

HARVEY A. LINCOFF, M.D., Assistant Clinical Professor of Ophthalmology, The New York Hospital-Cornell Medical Center, New York, New York



Dr. Lincoff

2:00 to 4:00 P.M.

Maine Society of Clinical Hypnosis

DONALD COULTON, M.D., Bangor, presiding

The Exploration Under Hypnosis of a Dual Amnesia Connected with the Sighting of an Unidentified Flying Object

BENJAMIN SIMON, M.D., Assistant Clinic Professor of Psychiatry, Tufts University School of Medicine, Boston, Massachusetts

Maine Society of Anesthesiology

PHILIP B. THOMAS, M.D., Bangor, presiding

The Anesthesiologists Viewpoint of Acute Cardio-Respiratory Problems

BENJAMIN E. ETSTEN, M.D., Professor of Anesthesia and Anesthetist-in-Chief, Tufts University School of Medicine, New England Medical Center Hospitals, Boston, Massachusetts



Dr. Simon

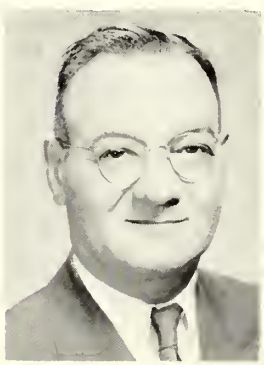
Maine Thoracic Society and the Maine Society of Internal Medicine

2:00 P.M. Maine Thoracic Society

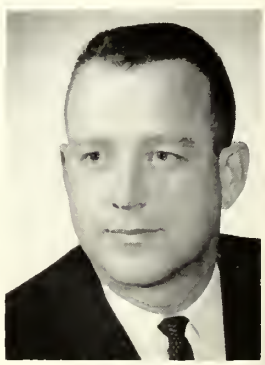
SAMSON FISHER, M.D., Waterville, presiding

Artificial Ventillation – The Why and The How

MEYER SAKLAD, M.D., Physician-in-Charge, Division of Anesthesia Research, Department of Anesthesiology, Rhode Island Hospital, Providence, Rhode Island



Dr. Saklad



Mr. Bridges

3:00 P.M. Maine Society of Internal Medicine

BRINTON T. DARLINGTON, M.D., Augusta, presiding

Facilities Planning in Maine

MR. ALAN M. BRIDGES, Executive Director, Health Facilities Planning Council, Augusta, Maine

Tuesday, June 13

10:00 A.M. Maine Medico-Legal Society

Business Meeting

MR. GEORGE C. WEST, Deputy Attorney General of Maine, Augusta, presiding

12:30 P.M. Maine Radiological Society

Luncheon Meeting

LAWRENCE A. NADEAU, M.D., Lewiston, presiding

Visual Problems in Roentgen Interpretation

WILLIAM J. TUDDENHAM, M.D., Director, Department of Radiology, Pennsylvania Hospital, Benjamin Franklin Clinic, Philadelphia, Pennsylvania and formerly Professor of Radiology, Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania



Dr. Tuddenham



Dr. Jordan

2:00 to 4:00 P.M.

Ear, Nose and Throat Group

LORING W. PRATT, M.D., Waterville, presiding

Three Dimensional Surgical Anatomy of the Temporal Bone

VALDEMAR M. JORDAN, M.D., Clinical Professor of Otology, Western Reserve University, Cleveland, Ohio

Luncheon Meetings

12:00 NOON

Monday, June 12

Orthopedists

Tuesday, June 13

Amy W. Pinkham Fund Committee

SPECIAL NOTICES

Election of President-elect

The election of a President-elect will take place at the General Assembly, June 12 at 4:00 p.m.

Election of Councilors

Election of Councilors for the following Districts will take place at the Second Meeting of the House of Delegates on Sunday, June 11 at 3:00 p.m.

Fifth District – Hancock and Washington

Sixth District – Aroostook, Penobscot and Piscataquis

In accordance with the By-Laws, "Nominations for members of the Council for any District where there is a vacancy shall be made by a caucus of the members of the House of Delegates of that District. Each candidate for Councilor must be a resident of the District for which he is nominated."

Council Meetings

The Council will meet on Saturday, June 10 and daily throughout the session at a time and place to be announced.

Committee Meetings

Amy W. Pinkham Fund Committee, Luncheon Meeting, Tuesday, June 13.

Technical Exhibits

Please visit these exhibits.

Golf Tournament

Daniel R. Shields, M.D., Lewiston, Chairman

HONORARY PINS

Introduction of the Association's Honorary Pin Recipients will be made by George E. Sullivan, M.D., President of the M.M.A., at the Annual Banquet, Monday evening, June 12 at 7:00 P.M.

FIFTY-YEAR PINS

Fifty-Year Lapel Pins will be presented to the following members who were graduated from Medical School in 1917:

Aroostook County

William V. Kirk, M.D., Miami, Florida
University of Maryland

Lincoln-Sagadahoc County

Sidney C. Dalrymple, M.D.,
South Lincoln, Massachusetts
Bowdoin Medical School

Washington County
DaCosta F. Bennet, M.D., Lubec
University of Maryland

FIFTY-FIVE-YEAR PINS

Fifty-Five-Year Pins will be presented to the following members who received Fifty-Year Pins in 1962:

Androscoggin County
Horace L. Gauvreau, M.D., Lewiston
University of Vermont College of Medicine

Kennebec County
J. Ramser Crawford, M.D., Augusta
Memphis Hospital Medical College

Oxford County
Nathaniel Mills, M.D., Wolfeboro, New Hampshire
Johns Hopkins University School of Medicine

Penobscot County
George B. Weatherbee, M.D., Hampden Highlands
Tufts University School of Medicine

Waldo County
Foster C. Small, M.D., Belfast
University of Vermont College of Medicine

SIXTY-YEAR PIN

A Sixty-Year Pin will be presented to the following member who received his Fifty-Year Pin in 1957:

York County
Joseph R. Larochelle, M.D., Biddeford
Laval University Faculty of Medicine, Quebec

Visiting Delegates

The Connecticut State Medical Society
PAYSON B. AYRES, M.D., Greenwich
NORMAN H. GARDNER, M.D., East Hampton

The Massachusetts Medical Society
DONALD A. NICKERSON, M.D., Salem

New Hampshire Medical Society
ANTHONY M. BONNANO, M.D., Berwick

Medical Society of the State of New York
THURMAN B. GIVAN, M.D., Brooklyn

The Rhode Island Medical Society
HANNIBAL HAMLIN, M.D., Providence

Vermont State Medical Society
B. ALBERT RING, M.D., Burlington

Delegates to Out-of-State Meetings

The Connecticut State Medical Society
JOHN P. DOW, M.D., Pittsfield

The Massachusetts Medical Society
GEORGE E. SULLIVAN, M.D., Fairfield

New Hampshire and Vermont State Medical Societies
PAUL S. HILL, JR., M.D., Saco

Medical Society of the State of New York
GEORGE E. SULLIVAN, M.D., Fairfield

The Rhode Island Medical Society
LEONARD G. MIRAGLIUOLO, M.D., Bangor

County Delegates

FIRST DISTRICT

Cumberland County Medical Society
Delegates: Stanley B. Sylvester, M.D., 400 Congress St., Portland, Secretary
(2 years)
Charles W. Capron, M.D., 22 Bramhall St., Portland
Robert W. Agan, M.D., 144 State St., Portland
Martin A. Barron, Jr., M.D., 37 Deering St., Portland
Stanley G. Dienst, M.D., 190 Pine St., Portland
Bernard Givertz, M.D., 131 Chadwick St., Portland
Thomas F. Conneen, M.D., 131 Chadwick St., Portland
(1 year)
Louis N. Taxiarchis, M.D., 144 State St., Portland
Lloyd G. Davies, M.D., 78 Main St., Fryeburg
Alvin A. Morrison, M.D., 57 Deering St., Portland
Frederick B. Clark, M.D., 131 State St., Portland

Alternates
(2 years)
Robert E. McAfee, M.D., 18 Bramhall St., Portland
Edmund W. Hardy, M.D., 134 U. S. Rt. 1, Falmouth
William L. MacVane, Jr., M.D., 211 State St., Portland
Edward C. Matthews, M.D., 131 Chadwick St., Portland
Douglass C. Pennoyer, M.D., 112 Vaughan St., Portland
Alphonse Telfeian, M.D., 131 Chadwick St., Portland
(1 year)
Sidney R. Branson, M.D., 37 Main St., South Windham
Kirk K. Barnes, M.D., Baribeau Dr., Brunswick
John F. Gibbons, M.D., 22 Bramhall St., Portland
Robinson L. Bidwell, M.D., 31 Bramhall St., Portland

York County Medical Society
Delegates: Charles W. Kinghorn, M.D., 4 Wentworth St., Kittery, Secretary
Carl E. Richards, M.D., 34 Winter St., Sanford
Robert F. Ficker, M.D., Maine St., Kennebunkport
Thomas Anton, M.D., 260 Main St., Biddeford

Alternates
Irvin Dorfman, M.D., Webber Hospital, Biddeford
Stephen A. Cobb, M.D., 34 Winter St., Sanford
Kenneth E. Leigh, M.D., Brixham Rd., York

SECOND DISTRICT

Androscoggin County Medical Association
Delegates: Donald L. Anderson, M.D., 369 Main St., Lewiston, Secretary
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Scientific and Special Exhibits

American Cancer Society, Maine Division, Inc.

Associated Hospital Service of Maine

Boston Medical Reports

Division of Cancer Control of the State of Maine Department of Health and Welfare

Division of Eye Care and Special Services of the State of Maine Department of Health and Welfare

Emergency Health Services, State of Maine Department of Health and Welfare

Health Insurance Council

Maine Association of Medical Assistants

Maine Chapter, American Academy of General Practice

Maine Dairy Council

Maine Heart Association, Inc.

Maine Radiological Society

Maine Society of Clinical Hypnosis

Maine Thoracic Society

New England Physicians Retirement Program

Pineland Hospital and Training Center

The National Foundation

Venereal Disease Control Section of the State of Maine Department of Health and Welfare

Vocational Rehabilitation Division of the State of Maine Department of Education

Marvin Warman, M.D. – Drug Treatment of Depressive Illness in the Practice of General Medicine

Technical Exhibits

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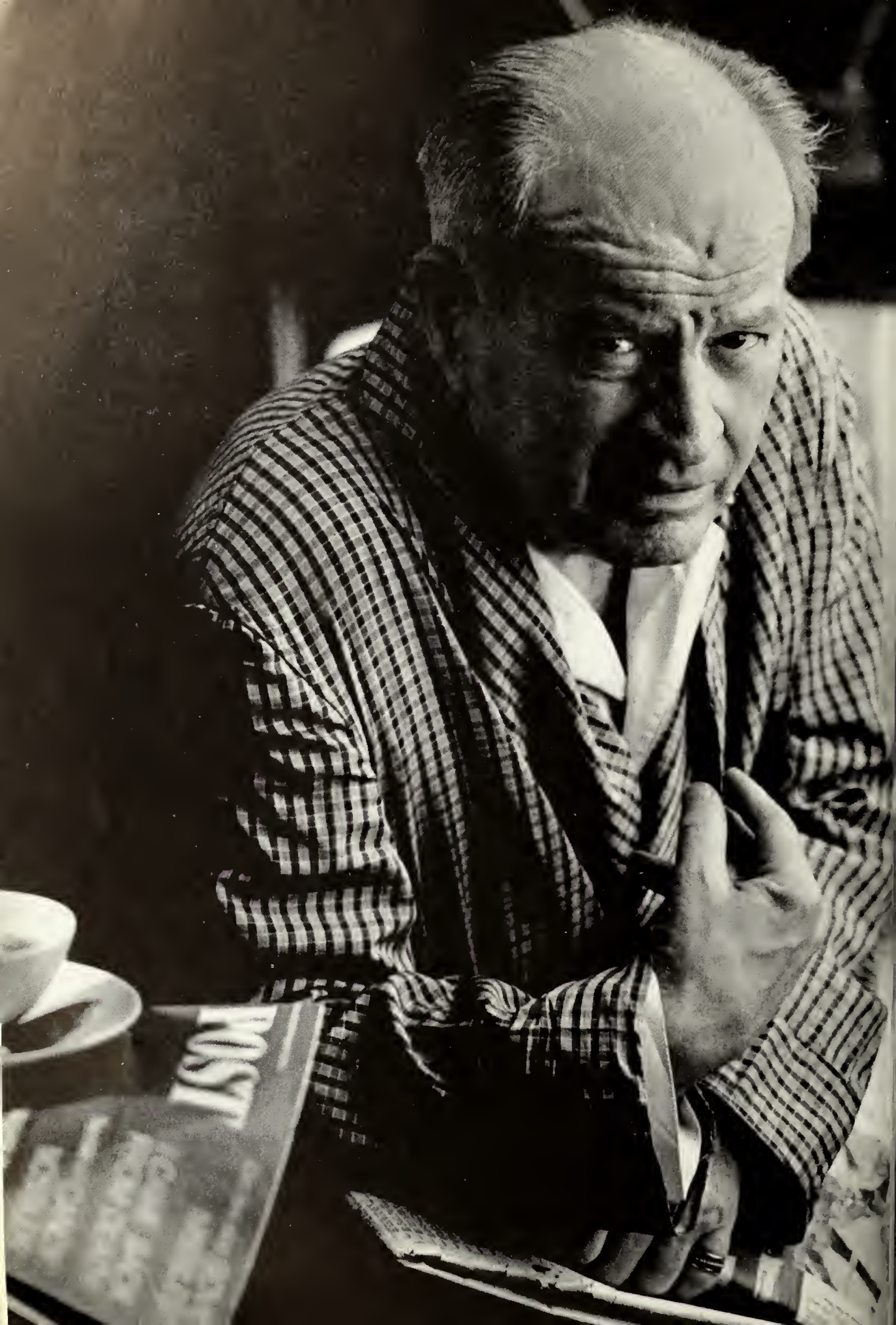
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Maine Heart Association Notes

116 State Street, Augusta, Maine

The Morbidity of Cardiac Nondisease in School Children

Clinical medicine concerns itself mainly with the diagnosis and treatment of disease. Most physicians would agree, however, that their job properly entails promotion of positive health. . . . Too many people exist in an unnecessary limbo where they either perceive themselves or are preceived by others to have a nonexistent disease. Such a person may be as disabled or "unhealthy" as if he had the disease.

. . . It is our hypothesis that the ill-effects accompanying some nondiseases are as extensive as those accompanying their counterpart diseases.

We undertook an epidemiologic survey of a problem frequently seen . . ., cardiac nondisease in school children. The greatest single group of children referred to our Cardiac Clinic . . . are found to have insignificant murmurs. "Delabeling" children thought to have heart disease is one of the most frequently performed tasks of most pediatric cardiologists.

Innocent heart murmurs exist in a large portion of the childhood population. . . .

To gain some perspective of the problem of cardiac nondisease, a large population of normal children was surveyed for suspected heart conditions. . . .

Restriction of children with innocent murmurs is only slightly more absurd than restriction of the vast majority of children with an organic heart defect. Both groups should be allowed to live normal lives.

. . . Children with real or imagined heart disease are ideal candidates for disturbed psychologic development. . . .

Only an approximation of the magnitude of the problem can be gained in a study such as this, though several investigations of school populations have shown no basis for the diagnosis in over half those labeled as having heart disease.

. . . Restriction should be considered radical rather than conservative advice. There is perhaps benefit to the underdiagnosis of both congenital heart disease and acute rheumatic fever. . . .

. . . Far too little emphasis has been placed on the nondisease case findings.

Of 20,500 school children surveyed to determine the number falsely considered to have heart disease . . ., 93 were reported at one time to have heart disease and rheumatic fever; heart disease was present in 18 percent.

The amount of disability from cardiac nondisease in children is estimated to be greater than that due to actual heart disease.

Submitted by Jacob B. Dana, M.D., Maine Heart Association

Reference — Bergman, A. B., et al, New England Journal of Medicine, Volume 276, Pages 1008-1013



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ntraindications: Barbiturates should not be adminis- ed to anyone with a history of porphyria, nor should y be given in the presence of uncontrolled pain, be- se excitement may result.

rning: May be habit-forming.

cautions: Tuinal should be used cautiously in patients with decreased liver function, since prolongation of effect may occur.

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AMERICAN CANCER SOCIETY - MAINE DIVISION, INC.

Brunswick, Maine

New Methods of Detecting Breast Cancer

DALLAS, TEX. — Three new methods of detecting breast cancer, if uniformly adopted, could eventually greatly increase the cure rate, a leading radiologist told the American Cancer Society's 1967 Scientific Sessicn on May 4, 1967.

Dr. J. Gershon-Cohen of Albert Einstein Medical Center, Philadelphia, and Professor of Radiologic Research at Temple University, described the development and potential of 1) mammography, an improved form of x-ray examination, 2) thermography, a technique that detects breast cancers by their elevated temperature, and 3) xerography, which produces x-ray pictures on a special ultra-sensitive plate, revealing different kinds of tissue on one photograph.

Gershon-Cohen said that "mammography has at last come of age," and added that "any physician who essays a 'complete' examination of the breasts without including x-ray studies is remiss in his efforts to discover Stage One lesions."

This type of early cancer, Stage One, is conceded to be curable in 80 percent of cases, he said. But he pointed out that, according to "careful studies," lumps in the breast found by palpation, average 3.5 centimeters in diameter, and that in 65 percent of cases cancer cells have already spread to the lymph nodes. The five-year survival rate, tantamount to cure, is only 50 percent in such cases, he declared.

Dr. Gershon-Cohen said, "The most astute examiner is unlikely to detect a cancer one centimeter in diameter." Mammography, he added, can discover lesions half that size.

He reported the recent completion of a survey of mammography at Albert Einstein Medical Center in Philadelphia which found breast cancers in 33 out of 1,120 women examined who were without symptoms of the disease. The average diameter of the lesions was 1.1 centimeters and 70 percent of the cases were Stage One.

According to Gershon-Cohen, radiologists using mammography, could find 20 percent of breast cancers that can't be felt by palpation. "On the other hand," he said, "surgeons will discover lesions in about 6 percent of cases that will not be demonstrated roentgenologically. (i.e. by x-rays)" He said that "when these specialists work as a team the result should approach 90 percent effectiveness in finding early breast cancers."

Thermography has been used at Albert Einstein Medical Center since 1962, to examine the breasts of 4,000 patients. Gershon-Cohen said that in 94 percent of cases thermographic analysis has revealed a "localized hot spot" over the lesion in 200 breast cancer patients.

Such hot spots can mean other kinds of disease or conditions, he said, but the absence of a localized temperature rise would mean that the "presence of disease is quite unlikely."

He suggested that mass examinations by thermography might be considered as a preliminary method of screening for breast cancer, reserving mammography for those in whom suspicious temperature patterns are found. He pointed out that the American Cancer Society is presently sponsoring a collaborative program by several institutions to test this two-step method.

Development of xerography, which still poses some technical problems is worth pursuing, Gershon-Cohen said. X-ray pictures are taken on specially prepared selenium-coated metal plates which produce a bas-relief effect. These pictures portray all of the breast tissues in excellent detail with a single exposure.

The Society's Annual Scientific Session preceded a meeting of its National Board, which convened Friday, May 5.

American Cancer Society News Service Release

In Memoriam

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Thomas A. Foster, M.D.	Portland
Gerald C. Leary, M.D.	Portland
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References: 1. Batterman, R. C., and Grossman, A. J.: Fed. Proc. *14*:316, 1955. 2. Goodman, L. S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 3, New York, The Macmillan Company, 1965, p. 331. 3. Roth, J. L. A., *et al.*: Gastroenterology *44*:146, 1963. 4. Conney, A. H., and Burns, J. J.: J. Pharmacol. Exp. Ther. *128*:340, 1960. 5. Settel, E.: Clin. Med. *6*:1373, 1959. 6. Berman, H. H., *et al.*: Dis. Nerv. Syst. *25*:430, 1964. 7. Darienzo, C.: Ibid., *27*:189, 1966.

U.S. PATENT NO. 2,845,877

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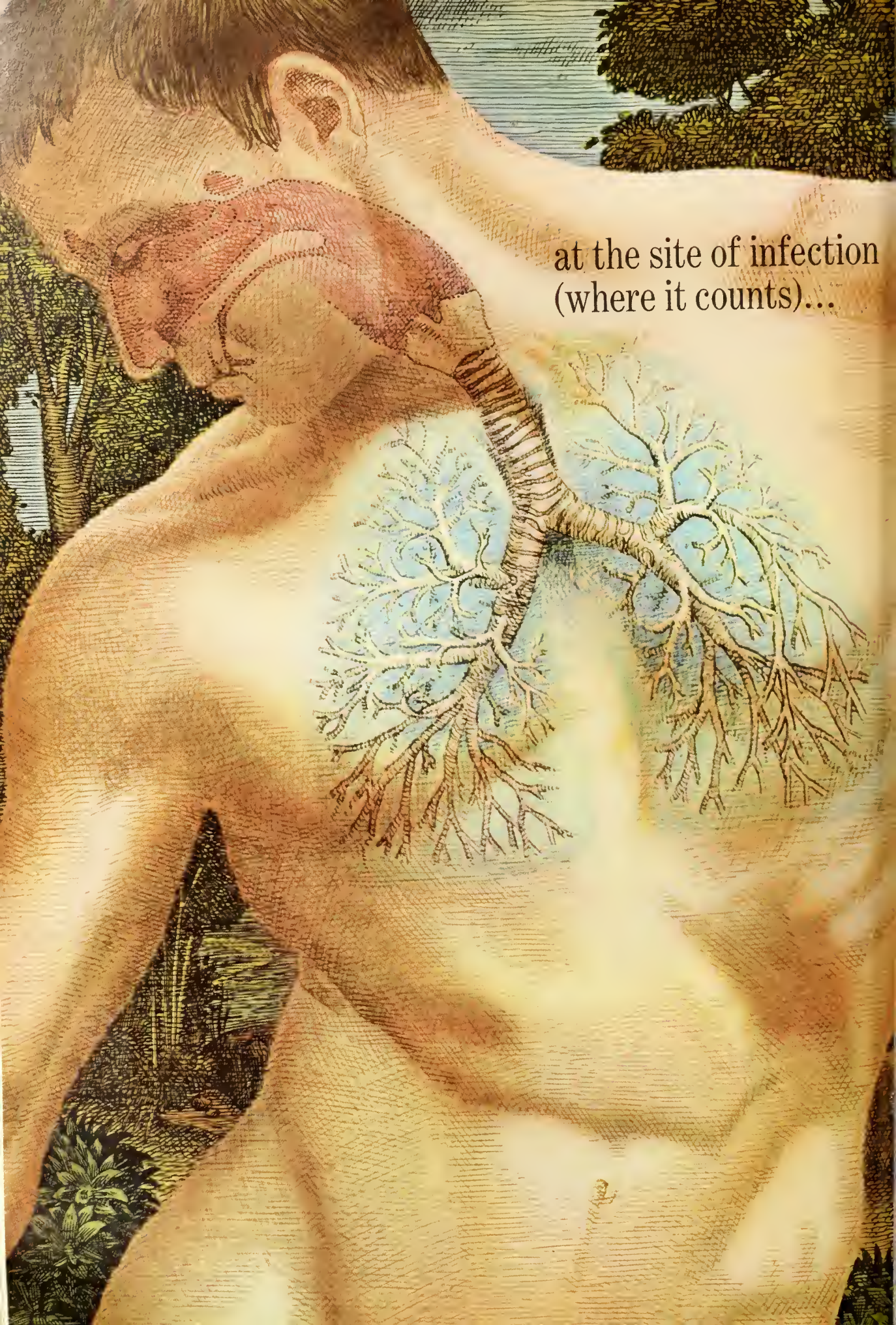
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Erythromycin Estolate

(See next page for prescribing information.)

Ilosone®/the most active oral form of erythromycin

Description: Ilosone is the most active form of oral erythromycin that has been developed. Because it is stable in acid, well absorbed, and excreted in lesser amounts in the bile, it provides faster, higher, and longer-lasting levels of antibacterial activity (ABA) in the serum, even when taken with food, than do comparable doses of erythromycin.

Indications: Ilosone is indicated in infections caused by microorganisms sensitive to its action (especially staphylococci, hemolytic streptococci, and pneumococci). The drug is therefore useful in a high proportion of bacterial diseases encountered in clinical practice and particularly in the treatment of bacterial infections of the upper and lower respiratory tract and soft tissues.

In the treatment of acute bacterial pharyngitis and tonsillitis, this antibiotic has promptly eradicated the bacteria (streptococci) and has produced a parallel prompt clinical improvement. There have been no group A beta-hemolytic streptococci resistant to this preparation. In beta-hemolytic streptococcus infections, treatment should be maintained for ten days to prevent the development of rheumatic fever or glomerulonephritis.

Erythromycin estolate has proved to be very effective in pneumococcus pneumonia and in acute bronchitis with pneumococci on culture. Bronchopneumonia and otitis media in children have responded well to its use.

The antibiotic has been used very successfully in staphylococcus infections. Good therapeutic results have been obtained in soft-tissue infections, abscesses, cellulitis, carbuncles, wound infections, and furunculosis.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents. As is the case with any treatment regimen used in these severe conditions, surgical procedures should be performed when indicated, and large dosages of the antimicrobial agents should be employed. In this fashion, Ilosone has been effective in staphylococcus pneumonia, osteomyelitis, septicemia, empyema, and meningitis.

Multiple 500-mg. doses of the drug have been useful in gonorrhea and syphilis. Since penicillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with preexisting liver disease or dysfunction.

Side-Effects: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have appeared in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly if the drug is readministered to sensitive patients, usually within forty-eight hours. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a second time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small compared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extrahepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeared to be definitely related to use of the drug, laboratory findings characterized by increased direct-reacting bilirubin, elev alkaline phosphatase levels, negative or weakly positive cepl flocculation and thymol turbidity tests, elevated serum glut oxalacetic transaminase levels, peripheral eosinophilia, and mal cholecystograms.

Individual idiosyncrasy seems evident since jaundice ha been reported in other patients taking prolonged courses o medication. Patients with chronic infection have been given to 2 Gm. of the drug daily for periods of two to six months patients with rheumatic fever have taken prophylactic dos 0.5 Gm. daily for two years without difficulty. In one grou 144 patients who received the drug daily for two years, no j dice was noted. It was of interest that members of six of patients' families, who were not taking the drug, had epi of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels determined in a group of fifty-four adults and children who 250 mg. of Ilosone daily for an average of sixteen montl rheumatic fever prophylaxis. The results were compared those of a similar group of forty-four patients who received icillin. There were no cases of jaundice in either group. Elev of SGPT and serum alkaline phosphatase levels during the c of treatment was observed in one patient treated with Il and in two patients treated with penicillin. Seven other pat in the group receiving Ilosone and four others in the peni group showed elevations in one of the tests at some time d administration of the drugs.

Very satisfactory therapeutic results, without toxicity, reported in 102 pediatric patients who received short-term day) courses of Ilosone in the treatment of streptococcus i tions. Results of liver function tests in these patients were parable to those in a similar control group who had rec penicillin.

Gastro-intestinal disturbances not associated with hepat fects are observed in a small proportion of individuals as a of a local stimulating effect of the medication on the alime tract; however, the normal intestinal gram-negative bac flora is not appreciably altered by erythromycin drugs.

Although allergic manifestations are uncommon with th of erythromycin, there have been occasional reports of urti skin eruptions, and, on rare occasions, anaphylaxis.

Administration and Dosage: Ilosone is administered orally.

Ilosone Pulvules®
Ilosone Chewable Tablets
Ilosone Drops
Ilosone, 125, for Oral Suspension

For infants and for children under twenty-five pounds of weight, the usual dosage is 5 mg. per pound every six hour children twenty-five to fifty pounds, 125 mg. every six h (Tablets Ilosone Chewable should be chewed or crushe swallowed with water.)

For adults and for children over fifty pounds, the usual d of Ilosone is 250 mg. every six hours.

For severe infections, these dosages may be doubled.

When larger doses are indicated, parenteral erythro therapy should be considered.

In the treatment of syphilis, the recommended total dos 20 to 30 Gm. given in divided doses for a period of ten to f days. Close follow-up of the patient is necessary since er mycin drugs have not had adequate evaluation in all sta syphilis. Examinations of spinal fluid are recommended a of the follow-up therapy.

For gonorrhea, 500 mg. four times a day for four da recommended. In the treatment of gonorrhea, patients v suspected lesion of syphilis should have a dark-field exami before receiving antibiotics, and monthly serologic tests s be made for a period of three months.

How Supplied: Pulvules Ilosone, Capsules, N.F., 125 and 2 (equivalent to base), in bottles of 24 and 100.

Tablets Ilosone Chewable, N.F., 125 mg. (equivalent to in bottles of 50.

Ilosone Drops, 5 mg. (equivalent to base) per drop, in size packages, with dropper calibrated at 25 and 50 mg.

Ilosone, 125, for Oral Suspension, N.F., 125 mg. (equi to base) per 5-cc. teaspoonful, in 60 and 150-cc.-size pac

References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:6
2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:39
3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198,

Additional information available to physicians upon request.
Eli Lilly and Company, Indianapolis, Indiana 46206.

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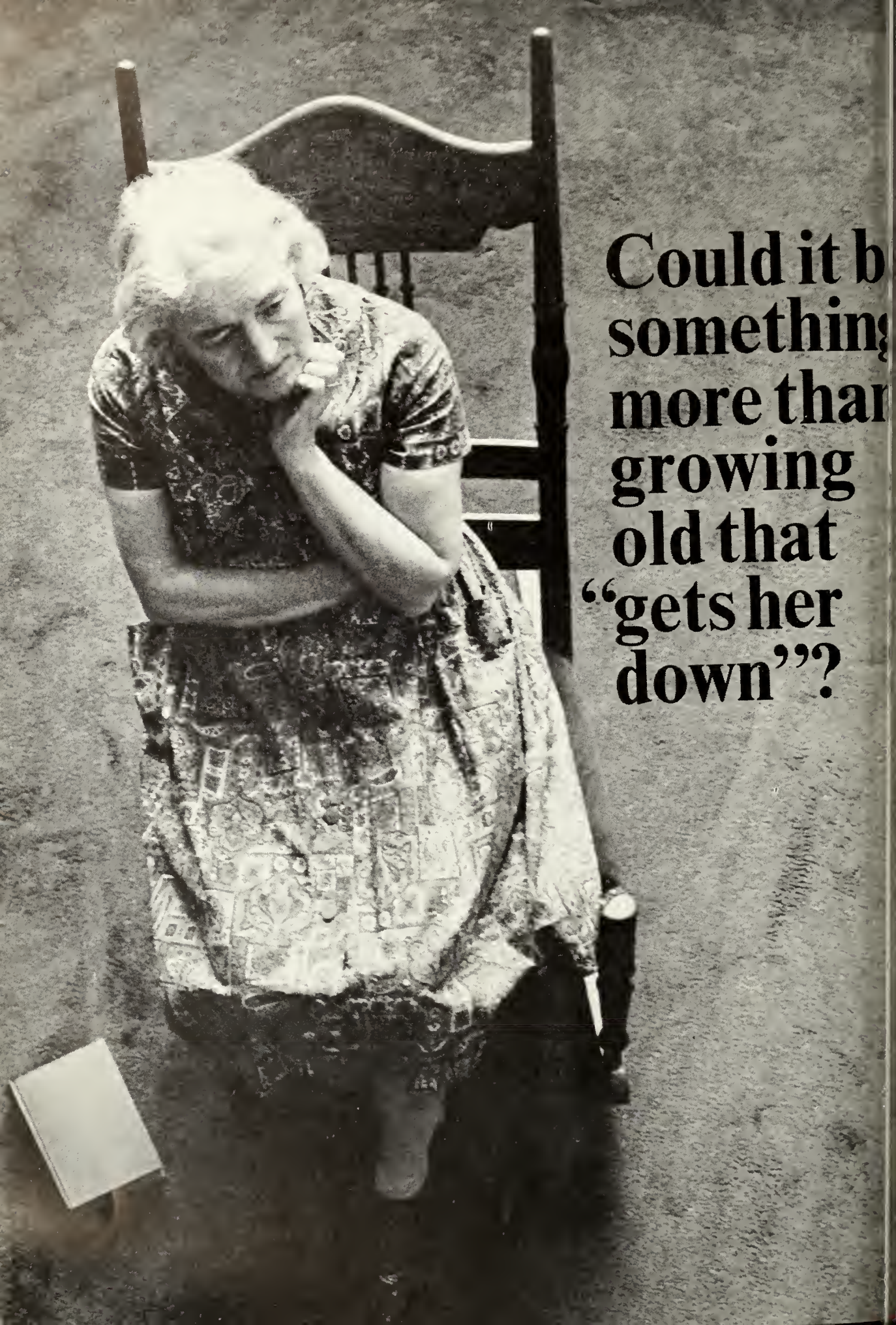
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Agitation	●		
Alcoholism	●		●
Anxiety	●		
Cancer patients	●	●	●
Severe neurodermatitis	●		
Drug addiction withdrawal symptoms	●		●
Emotional disturbances (moderate to severe)	●		
Nausea & vomiting	●		●
Neurological disorders	●		
Obstetrics	●	●	●
Pain	●	●	●
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Porphyria	●	●	
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Tetanus	●	●	

'Thorazine' is useful as a specific adjuvant in the above named conditions.

The following is a brief precautionary statement. Before prescribing, the physician should be familiar with the complete prescribing information In SK&F literature or *PDR*. *Contraindications:* Comatose states or the presence of large amounts of C.N.S. depressants. *Precautions:* Potentiation of C.N.S. depressants may occur (reduce dosage of C.N.S. depressants when used concomitantly). Antiemetic effect may mask other conditions. Possibility of drowsiness should be borne in mind for patients who drive cars, etc. In pregnancy, use only when necessary to the welfare of the patient. *Side Effects:* Occasionally transitory drowsiness; dry mouth; nasal congestion; constipation; amenorrhea; mild fever; hypotensive effects, sometimes severe with I.M. administration; epinephrine effects may be reversed; dermatological reactions; parkinsonism-like symptoms on high dosage (in rare instances, may persist); weight gain; miosis; lactation and moderate breast engorgement (in females on high dosages); and less frequently cholestatic jaundice. Side effects occurring rarely include: mydriasis; agranulocytosis; skin pigmentation, lenticular and corneal deposits (after prolonged substantial dosages).

For a comprehensive presentation of 'Thorazine' prescribing information and side effects reported with phenothiazine derivatives, please refer to SK&F literature or *PDR*.

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Could it b
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down"?

Mild mood depression, poor appetite, little interest in the present or future. Does this picture mean that she's giving in to functional fatigue?

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Adequate dosage is important: Prescribe Alertonic—one tablespoonful t.i.d., 30 minutes before meals ...tastes best chilled.

And for your patient's sake, prescribe Alertonic in the convenient, economical one-pint bottle.

Available only on prescription

Alertonic®

Each 45 cc. (3 tablespoonfuls) contains: alcohol, 15%, pipradrol hydrochloride, 2 mg.; thiamine hydrochloride (vitamin B_1) (10 MDR*), 10 mg.; riboflavin (vitamin B_2) (4 MDR), 5 mg.; pyridoxine hydrochloride (vitamin B_6), 1 mg.; niacinamide (5 MDR), 50 mg.; choline,† 100 mg.; inositol,† 100 mg.; calcium glycerophosphate, 100 mg. (supplies 2% MDR for calcium and for phosphorus) and 1 mg. each of the following: cobalt (as chloride), manganese (as sulfate), magnesium (as acetate), zinc (as acetate), and molybdenum (as ammonium molybdate).

*Multiple of adult Minimum Daily Requirement supplied.
†The need for these substances in human nutrition has not been established.

Indications: 1. Functional fatigue such as that often associated with: a depressing experience or stressful time of life; advancing years; convalescence; limited activity or confinement. 2. Poor appetite and vitamin-mineral deficiency as they occur in: patients having faulty eating habits; geriatric patients who are losing interest in food; patients convalescing from debilitating illness or surgery.

Contraindications: As with other drugs with CNS stimulating action, Alertonic is contraindicated in hyperactive, agitated or severely anxious patients and in chorea or obsessive compulsive states.

Side effects: Reports of overstimulation have been rare. Patients who are known to be unduly sensitive to the effects of stimulant drugs should be observed carefully in the initial stages of treatment.

Dosage: Adults, 1 tablespoonful; children (over 15 years old), 1 to 2 teaspoonfuls; children (4 to 15 years old), 1 teaspoonful. To be taken three times daily 30 minutes before meals.

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...soothes colicky pain with paregoric*
...consolidates fluid stools with pectin
...adsorbs irritants with kaolin,
and protects intestinal mucosa

In children, Parepectolin may be used to control diarrhea promptly and prevent dehydration, until etiology has been determined. In some cases, Parepectolin may be all the therapy necessary.

Parepectolin®

Each fluid ounce of creamy white suspension contains:
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Contains opium (¼ grain) 15 mg. per fluid ounce.
warning: may be habit forming
Pectin (2½ grains) 162 mg.
Kaolin (specially purified) (85 grains) 5.5 Gm.
(alcohol 0.69%)
Usual Children's Dose: One or two teaspoonfuls three times daily.

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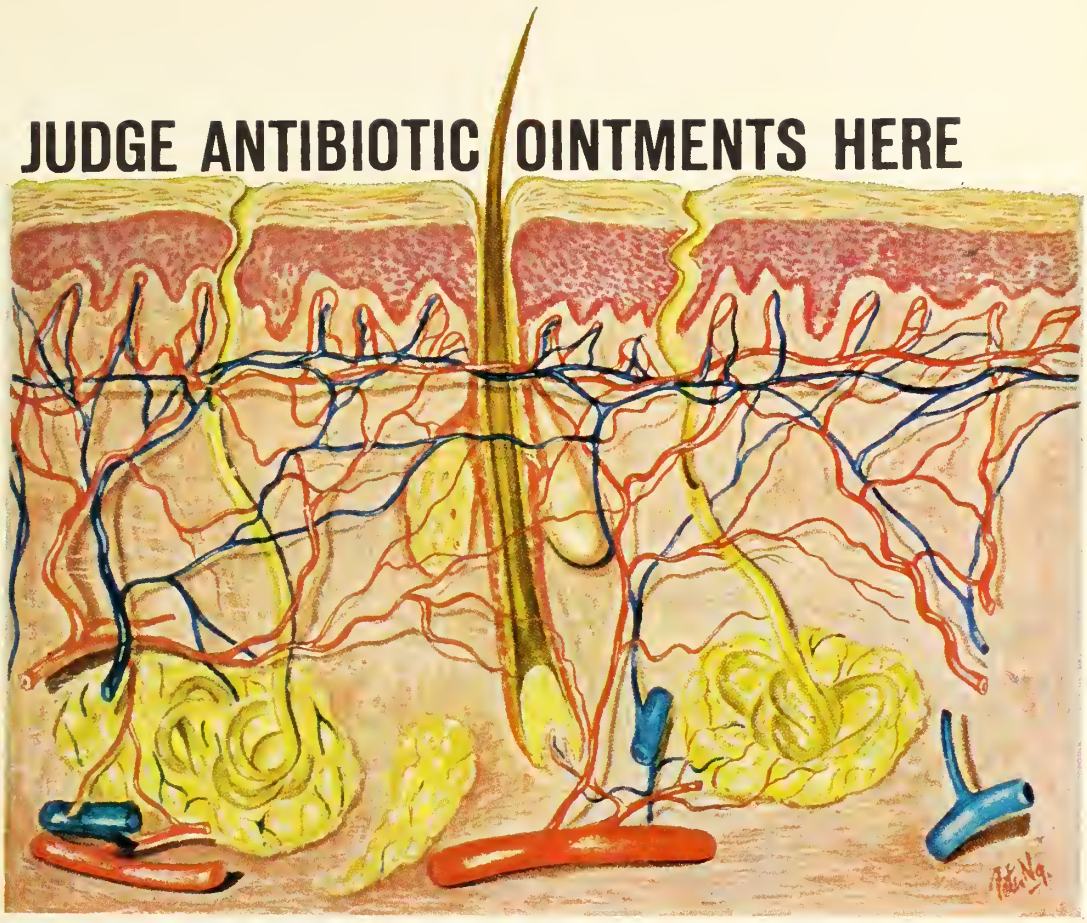
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Caution: As with other antibiotic preparations, prolonged use may result in overgrowth of nonsusceptible organisms and/or fungi. Appropriate measures should be taken if this occurs. Articles in the current medical literature indicate an increase in the prevalence of persons allergic to neomycin. The possibility of such a reaction should be borne in mind.

Contraindications: This product is contraindicated in those individuals who have shown hypersensitivity to any of its components.

Supplied: Tubes of 1 oz., ½ oz. with applicator tip, and ⅛ oz. with ophthalmic tip.

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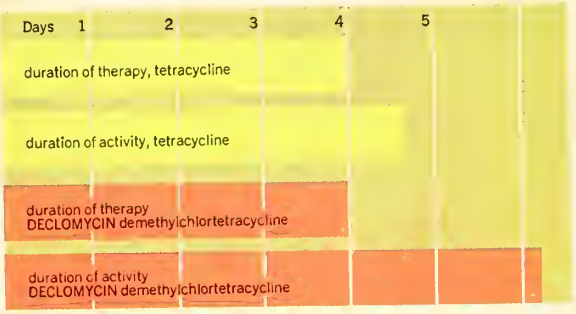
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Effective in a wide range of everyday infections—respiratory, urinary tract and others—in the young and aged—the acutely or chronically ill—when the offending organisms are tetracycline-sensitive.

Contraindication—History of hypersensitivity to demethylchlortetracycline.

Warning—In renal impairment, usual doses may lead to excessive systemic accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort.

Precautions and Side Effects—Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measu should be taken. Use of demethylchlortetracycline dur tooth development (last trimester of pregnancy, neona period and early childhood) may cause discoloration the teeth (yellow-grey-brownish). This effect occurs mo during long-term use but has also been observed in sh treatment courses. In infants, increased intracranial pi sure with bulging fontanels has been observed. All si and symptoms have disappeared rapidly upon cessat of treatment. Side reactions include glossitis, stomat proctitis, nausea, diarrhea, vaginitis and dermatitis adverse reaction or idiosyncrasy occurs, discontinue m ication and institute appropriate therapy. Anaphylac reactions have been reported.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b Should be given 1 hour before or 2 hours after me since absorption is impaired by the concomitant adr istration of high calcium content drugs, foods and s dairy products.

Capsules: 150 mg; *Tablets:* film coated, 300 mg, 150 and 75 mg of demethylchlortetracycline HCl.

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Precautions: Use with caution in patients hypersensitive to sympathomimetic compounds, who have coronary or cardiovascular disease, or are severely hypertensive.

Dextro-amphetamine sulfate: Excessive use by unstable individuals may result in psychological dependence.

Meprobamate: Careful supervision of dose and amounts prescribed is advised, especially for patients with known propensity for taking excessive quantities of drugs. Excessive and prolonged use in susceptible persons, e.g. alcoholics, former addicts, and other severe psychoneurotics, has been reported to result in dependence on the drug. Where excessive dosage has continued for weeks or months, reduce dosage gradually. Sudden withdrawal may precipitate recurrence of preexisting symptoms such as anxiety, anorexia, or insomnia; or withdrawal reactions such as vomiting, ataxia, tremors, muscle twitching and, rarely, epileptiform seizures. Should meprobamate cause drowsiness or visual disturbances, reduce dosage and avoid operation of motor vehicles, machinery or other activity requiring alertness. Effects of excessive alcohol consumption may be increased by meprobamate. Appropriate caution is recommended with patients prone to excessive drinking. In patients prone to both petit and grand mal epilepsy meprobamate may precipitate grand mal attacks. Prescribe cautiously and in small quantities to patients with suicidal tendencies.

Side Effects: Overstimulation of the central nervous system, jitteriness and insomnia or drowsiness.

Dextro-amphetamine sulfate: Insomnia, excitability, and increased motor activity are common and ordinarily mild side effects. Confusion, anxiety, aggressiveness, increased libido, and hallucinations have also been observed, especially in mentally ill patients. Rebound fatigue and depression may follow central stimulation. Other effects may include dry mouth, anorexia, nausea, vomiting, diarrhea, and increased cardiovascular reactivity.

Meprobamate: Drowsiness may occur and can be associated with ataxia; the symptom can usually be controlled by decreasing the dose, or by concomitant administration of central stimulants. Allergic or idiosyncrotic reactions: maculopapular rash, acute nonthrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever, transient leukopenia. A case of fatal bullous dermatitis, following administration of meprobamate and prednisolone, has been reported. Hypersensitivity has produced fever, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, stomatitis, proctitis (1 case), anaphylaxis, agranulocytosis and thrombocytopenic purpura, and a fatal instance of aplastic anemia, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity, usually after excessive dosage. Impairment of visual accommodation. Massive overdosage may produce drowsiness lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

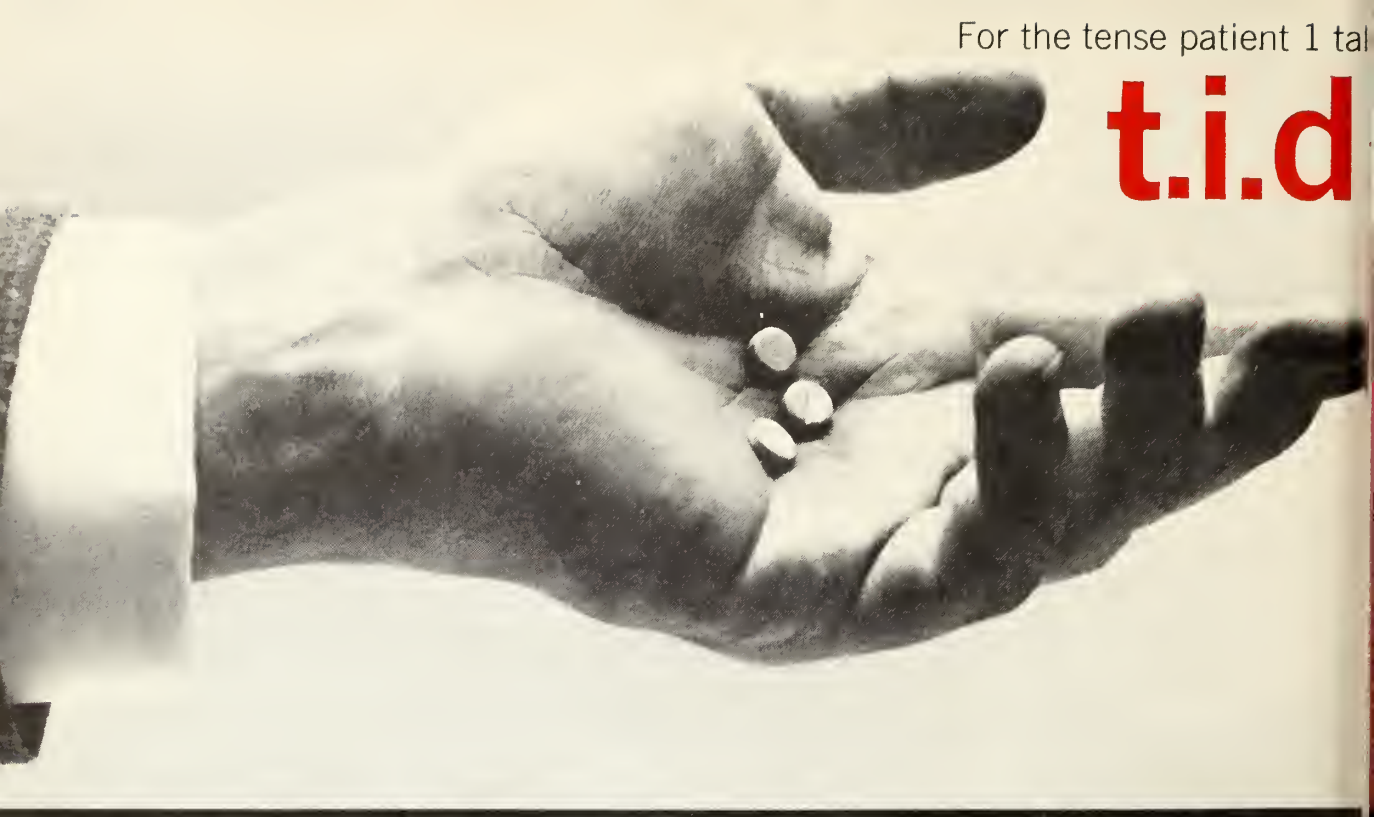
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For the tense patient 1 tal

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who can't slee

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extra tablet at bedtim

Valium

(diazepam

Roche®

Before prescribing, please consult complete product information, a summary of which follows:

Contraindications: Infants, patients with history of convulsive disorders or glaucoma.

Warning: Not of value in the treatment of psychotic patients, and should not be employed in lieu of appropriate treatment.

Precautions: Limit dosage to smallest effective amount in elderly patients (not more than 1 mg, one or two times daily) to preclude ataxia or oversedation. Advise patients against possibly hazardous procedures until correct maintenance dosage is established; driving during therapy not recommended. In general, concurrent use with other psychotropic agents is not recommended. Warn patients of possible combined effects with alcohol. Safe use in pregnancy not established. Observe usual precautions in impaired renal or hepatic function and in patients who may be suicidal; periodic blood counts and liver function tests advisable in long-term use. Cease therapy gradually.

Side Effects: Side effects (usually dose-related) are fatigue, drowsiness and ataxia. Also reported: mild nausea, dizziness, blurred vision, diplopia, headache, incontinence, slurred speech, tremor and skin rash; paradoxical reactions (excitement, depression, stimulation, sleep disturbances, hallucinations); changes in EEG patterns. Abrupt cessation after prolonged overdosage may produce withdrawal symptoms similar to those seen with barbiturates, meprobamate and chlordiazepoxide HCl.

Dosage—Adults: Mild to moderate psychoneurotic reactions, 2 to 5 mg b.i.d. or t.i.d.; severe psychoneurotic reactions, 5 to 10 mg t.i.d. or q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; muscle spasm with cerebral palsy or athetosis, 2 to 10 mg t.i.d. or q.i.d. Geriatric patients: 1 or 2 mg/day initially, increase gradually as needed.

Supplied: Tablets, 2 mg, 5 mg and 10 mg; bottles of 50 for convenience and economy in prescribing.

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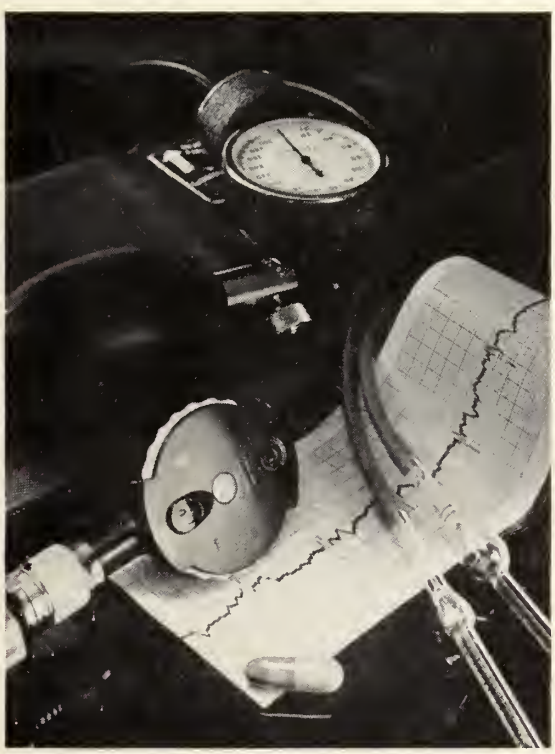
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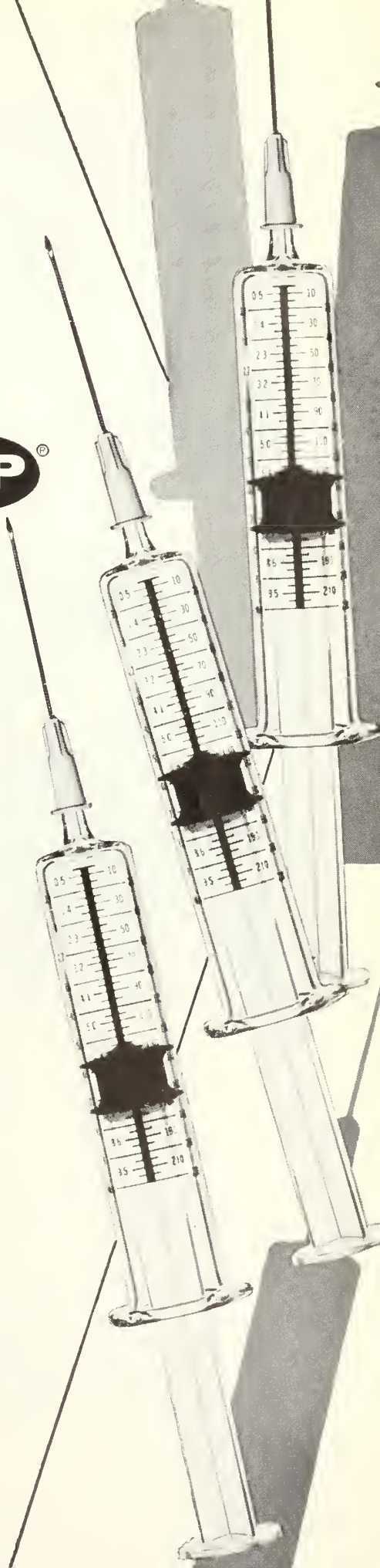
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This all-inclusive disposable put-up lessens the chance of cross-infection and saves time and labor— the most costly commodities.

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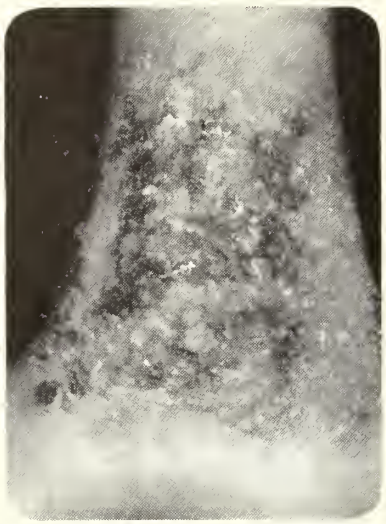
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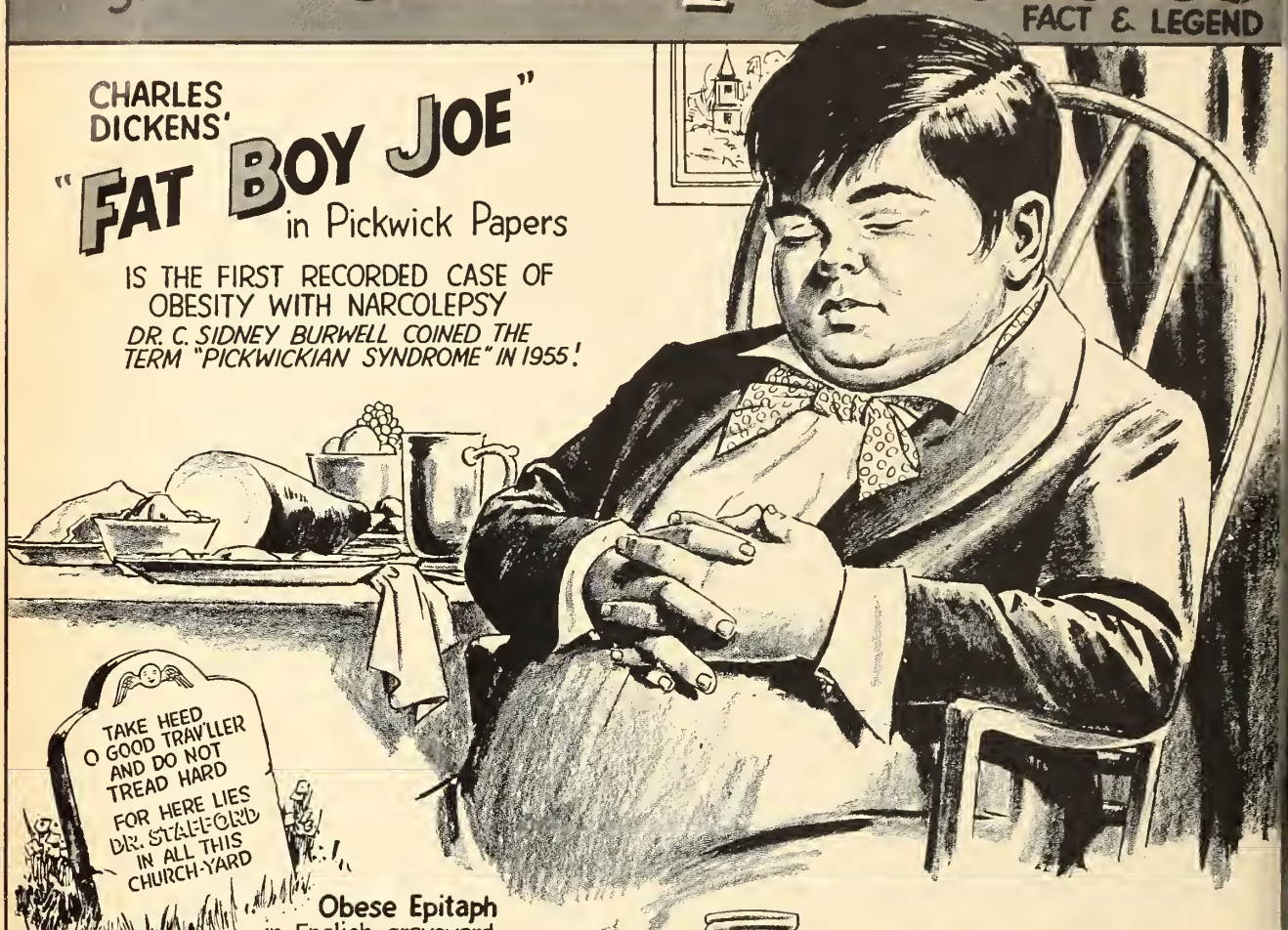
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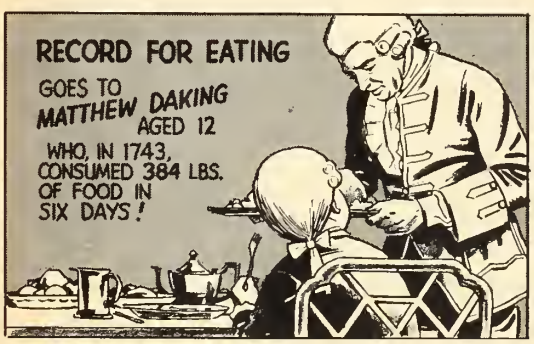
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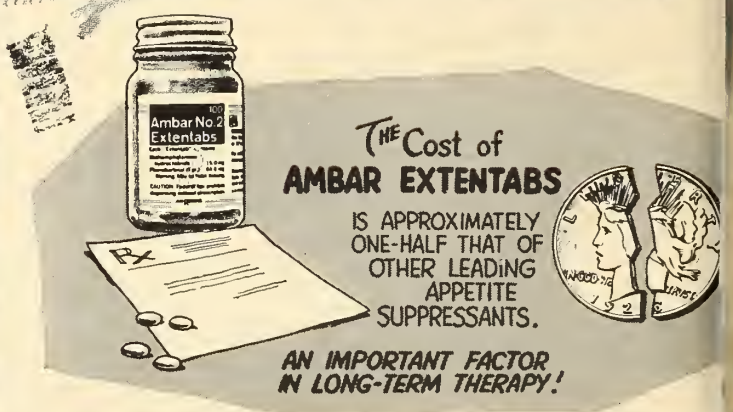
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References: 1. Batterman, R. C., and Grossman, A. J.: Fed. Proc. *14*:316, 1955. 2. Goodman, L. S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 3, New York, The Macmillan Company, 1965, p. 331. 3. Roth, J. L. A., *et al.*: Gastroenterology *44*:146, 1963. 4. Conney, A. H., and Burns, J. J.: J. Pharmacol. Exp. Ther. *128*:340, 1960. 5. Settel, E.: Clin. Med. *6*:1373, 1959. 6. Berman, H. H., *et al.*: Dis. Nerv. Syst. *25*:430, 1964. 7. Darienzo, C.: Ibid., *27*:189, 1966.

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The Indispensable Infusion Ingredients - Salt and Water

Alden W. Squires, M.D.*

Every real advance in medical knowledge comes after a trial-and-error period during which various principles and practices are widely accepted for a time and then discarded in favor of others presumed to be more up to date. Medicine has seen almost as many vogues come and go as has the world of ladies' fashions. Doctors especially in bygone days have tended to accept the pronouncements of the latest "literature" almost an uncritically as their wives have followed the dictates of VOGUE. In one important way, however, the course of Medicine has differed from the aimless wandering of the fashion world. The era of whimsies and caprices eventually ends as facts emerge to put medical practices on a sound, scientific basis.

The onetime universal faith in phlebotomy, antiphlogistics, aperients, tonics and countless other quaint nostrums illustrates the willingness of doctors, in the past at least, to believe in whatever was currently in vogue. Nor has this trait been altogether outgrown; we still see surgeons faithfully performing the Listerian hold-over of "carbolizing" the appendiceal stump!

In few fields of medical practice have more fads come and gone, particularly during the twentieth century, than in that of parenteral fluid-therapy. The purpose of this paper is to review these changing trends and to discuss certain recently developed concepts, not simply because they are "current concepts" now achieving popular acceptance but because they possess an inherent validity which suggests that the era of fad following is ending and that henceforth the matter of supportive fluid therapy will be governed by established scientific facts.

The use of parenteral fluids did not become a vogue until the present century was well underway of course. At the time it was introduced it was already known that major trauma is regularly followed by a period of positive sodium balance. For this reason medical fashion leaders of the time decided that salt should be withheld from postoperative patients. Later, for some strange reason, the pendulum began to swing the other way and by the mid-thirties it was stylish to give postoperative patients voluminous infusions of saline solution, although as often as not the now highly unstylish technique of hypodermoclysis was used.

In 1944 Coller, et al.,[1] after a rather poorly conceived study of five selected operative cases, revived the ancient fears of "salt-retention". He declared that its appearance in the postoperative state was evidence of an acute derangement of the salt-excretory function and that it exposes the patient to the further hazard of "water-intoxication." He expressed the opinion that saline infusions were completely contraindicated in postoperative patients. His prestige was sufficient to make his statement "the last word on the subject" and it was accepted almost without question. Anyone loath to believe that a modern doctor can be so credulous as to subscribe to a mere whim or fad should recall how implicity the "no salt" rule was believed. It wasn't many years ago when any doctor wanting to prove how up to date he was could do so by pointing out the hazards of salt for postoperative cases.

It required more than a decade of sound research to overcome fully this profound distrust of parenteral saline solutions. Meanwhile, another vogue achieved great popularity after receiving an impetus from reports of experiences during World War II and the Korean War. This was the vogue for using blood (or plasma) in accordance with the principle of "volume replacement." That principle derived from the thesis that if all blood loss is replaced by transfusing an equal amount of blood or plasma, homeostasis is fully maintained and survival of almost any degree of trauma and bloodshed is assured.

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Nor has this vogue yet gone out of favor. A good many doctors consider blood the *sine qua non* for treating hypotension, even though a good many death summaries conclude with the words: "In spite of adequate supportive treatment, including full blood replacement, the patient expired."

The obvious paradox of a statement such as the foregoing caused a number of astute clinicians to become increasingly skeptical of the "volume replacement" concept and they began looking carefully into the possibility that water and salt might also play important roles in maintaining and restoring effective circulation.

One weakness of the replacement principle is the fact that the vascular system cannot be compared to a container which after losing a portion of its contents can be refilled by pouring back an equal amount. The vascular system differs from a glass bottle because it stretches, contracts and leaks. Its leaky character has become quite evident since the means of accurately measuring blood volume have become available. These demonstrate that blood volume is not static but continually fluctuates in response to changing conditions within and without the body.[2] It increases during sleep, exercise and exposure to heat, after ingestion of food and fluids, and even upon changing from supine to erect position. It decreases as these conditions cease and even more during emotional stress and exposure to cold. Such normal fluctuations of blood volume may cause it to change by as much as 500 cc. per day, with the hematocrit varying by as much as 5%. Such variation of hematocrit obviously means that the volume changes are due to gains and losses of plasma.

The diurnal volume changes are comparatively small, however, and apart from them a fairly constant relationship is maintained between blood volume and body weight, regardless of qualitative changes occurring in the blood itself. For example, in slowly developing, chronic anemia the red cell mass may fall to half or even less of its normal level but total blood volume remains practically unchanged. Even after acute blood loss – provided it does not exceed 20% of total blood volume – the body reacts promptly and usually succeeds within 24 hours in restoring blood volume to or nearly to its prior level. Meanwhile vasomotor and cardiac functions are modified to assist in maintaining circulatory effectiveness and tiding the body over the emergency situation. These are temporary, adaptive mechanisms that operate until recovery of volume takes place and eliminates the disparity.

Both the diurnal fluctuations of blood volume and the body's ability to recover from either acute or chronic blood losses attest to the existence within the body of a "reservoir" of isotonic electrolyte solution which is in equilibrium with the blood and capable of shifting either into or out of the vascular system, thus maintaining essentially normovolemic conditions.

It is not easy to locate this reservoir anatomically or to visualize it in keeping with the usual definition of "space" or "compartment." Nevertheless its existence is undeniable. Variously termed the interstitial, extravascular and extracellular space, it is distributed throughout the body in the form of innumerable, microscopic interstices bounded on one side by capillary walls and on the other by cell membranes. Its contents are variously designated as the interstitial, extravascular or extracellular fluid and hereafter, for the sake of brevity, will be referred to as ECF. Except for its lack of protein, ECF is chemically almost identical to blood plasma and the two fluids are isotonic. It represents about 15% of total body weight. Not only its large size but also its essential role in the maintenance of blood volume entitle the ECF space to be regarded as one of the major organs of the body.

The speed at which ECF is mobilized to compensate for acute blood loss can be demonstrated in animals injected with radioactive red cells. If they are subjected to slow but continuing hemorrhage, monitoring of the outflowing blood shows dilution beginning almost immediately and becoming progressively greater as bleeding continues. Provided total blood loss does not exceed 25%, an hour after bleeding ends the total circulating blood volume is considerably more than it would be were the vascular system merely a container from which a known amount of contents has been removed. With adequate fluid intake, blood volume will be back to its pre-hemorrhage value within 24 hours. Since this recovery of volume is accomplished almost entirely by movement of aqueous electrolyte solution from ECF space into the vascular system, it is inevitably accompanied by a corresponding decrease in red cell concentration and a fall of hematocrit. Following a single hemorrhagic episode, therefore, a drop in the hematocrit has no ominous significance and is, in itself, no indication for a transfusion. On the contrary, it is evidence of good recovery of the essential volume function of the circulation.

If, instead of losing blood, the experimental subject is given a transfusion, the ensuing sequence of events is the reverse of that described above. As the excess blood begins augmenting the circulating intravascular volume, isotonic electrolyte solution begins to move from the vascular system into the ECF space at a rate which parallels that of the transfusion. Before long, the excesses of water and salt extracted from the blood are transported to the kidneys and excreted. This selective removal of plasma causes the red cell mass and hematocrit to increase proportionately. Indeed, it can be stated categorically that any change in the hematocrit following blood transfusion is mediated almost solely by the extent to which it displaces plasma from the blood stream, and that such dispersal does not occur unless the blood volume is already normal, or nearly so, when the transfusion is given. If the recipient is really hypovolemic, most or all of the transfused blood will remain unchanged in the vascular system where it simply mixes with the blood

already present and the change of hematocrit is relatively trivial.

It is advisable to point out that these fluid shifts that take place *in vivo* cannot be precisely simulated in laboratory experiments with semi-permeable membranes. In addition to membranes and the operation of the physico-chemical mechanisms of osmosis, these require physiological activity or integrity as well – cardiac and circulatory functions to transport the fluid and salt to the kidneys and renal function to effect their elimination. Impairment of any of these functions causes a corresponding decrease in the dispersal and disposal of excesses of fluid within the vascular system. This is equally true whether the fluid-excess is saline solution, plasma or blood. Any fluid that cannot be effectively dispersed from the vascular system to the ECF space and then be effectively disposed of can lead to hypervolemia and, eventually, to cardiac overloading and diminishing cardiac output. This hazard is best averted by monitoring the central venous pressure, which reflects cardiac output.

In summary, the current concept of the circulatory system is that it comprises two separate but inter-connected compartments: (1) the vascular system with its circulating plasma and cells, and (2) the extravascular system with its stores of isotonic ECF. Neither compartment is tight or rigid; each stretches, contracts and leaks as necessary to keep its own content of electrolyte solution in quantitative and qualitative equilibrium with that of the other. Losses of blood are corrected by movement of ECF into the vascular system; increases of blood volume are corrected by movement of fluid into the ECF space. Overloading either compartment with a type of fluid with which the other space cannot cope successfully, destroys the normal, essential equilibrium and adversely affects the efficiency of the circulatory system as a whole.

According to the unified concept of shock proposed by Lillehei,[3] the stage of irreversibility is due to progressive loss of plasma from the vascular system. As the deficit of circulating volume increases it causes increasing capillary stasis, stagnant anoxia, further losses of fluid into the tissues, a growing accumulation of products of anaerobic metabolism and, finally, myocardial failure. Such losses of plasma from the vascular system are paralleled by corresponding losses of ECF but these changes are not two separate, independent events taking place simultaneously. Rather, the progressive loss of circulating plasma is due to losses of ECF which have already taken place and because of which reserves of fluid for augmenting the blood volume are exhausted. It follows, therefore, that any therapeutic plan which fails to take into consideration the necessity of replenishing the depleted ECF reservoir is incomplete and will prove comparatively ineffectual in practice. The deficit of circulating plasma cannot be corrected unless or until the deficit of ECF is also corrected. Consequently, modern concepts of the treatment of shock stress much less than formerly the immediate, full replacement of red cells and plasma and give due emphasis to the urgent importance of adequately replacing missing ECF and restoring plasma volume.

Several observers have quantitatively measured the losses of ECF which invariably follow all forms of trauma whether it be caused by surgery or other external force or by thermal or bacterial factors. Such losses of ECF are found to be independent of blood loss and the disparity is often great. In severe burns, these fluid losses are plainly visible but in other forms of trauma they usually are not objectively apparent. In these latter cases when actual measurements show that significant losses of ECF have actually taken place it is necessary and reasonable to assume that the missing fluid has become sequestered or isolated within the body in such a way that it is no longer available to serve the functional fluid-system.

Shires, *et al.*,[4] at the Parkland Memorial Hospital in Dallas measured separately the volumes of red cells, plasma and ECF in a number of patients immediately prior to various surgical operations and repeated these measurements two hours later with no fluid-intake during the interval. They found that patients who underwent relatively non-traumatic operations with blood losses of less than 200 cc. typically ended up with no appreciable change of blood volume and a deficit of ECF approximately equal to the amount of known blood loss. Thus in clinical practice the prompt and effective transfer of ECF into the blood stream to compensate for blood loss was nicely demonstrated.

Patients who underwent more extensive surgery with blood losses ranging from 215 cc. to nearly a liter had losses of ECF which varied widely; in one patient it was 28% of the original amount. These losses of ECF often exceeded known losses of blood and other fluids and the only factor with which they appeared to correlate was the severity of the operative trauma. The obvious conclusion is that major surgery causes functional ECF to accumulate as edema fluid in the vicinity of the traumatized site where for a time it remains immobilized and non-functional. Since levels of serum sodium remain unchanged, the fluid loss involves pure ECF.

Thus one who takes seriously the concept of "volume replacement" must consider this loss of functional ECF which becomes sequestered in the traumatized muscles, bowel and areolar tissues adjacent to the site of operation. This body area is often designated, not inappropriately, as the "third space" of the body's fluid system. Losses of functional ECF through sequestration are significant because (1) they are related wholly to trauma and are independent of blood loss, (2) they represent actual withdrawals of isotonic electrolyte solution from the ECF reservoir, (3) any loss of functional ECF reduces the body's capacity to compensate for blood loss and maintain an effective circulating volume.

TABLE 1

DOGS WITH HEMORRHAGIC SHOCK OF UNIFORM SEVERITY WERE DIVIDED INTO THE FOLLOWING TREATMENT GROUPS:

Group I Return of all shed blood
Group II Return of all shed blood + expansion of plasma volume
Group III Return of all shed blood + repletion of ECF with lactated Ringer's solution

Group	*During shock*			*After treatment*			*Survival*
	RBC mass	P.V.	ECF vol.	RBC mass	P.V.	ECF vol.	
I	−47%	−18%	−42%	normal	+15%	−28%	20%
II	−48%	−19%	−43%	normal	+12%	−30%	30%
III	−51%	−22%	−42%	normal	+15%	normal	70%

(from Shires, *et al.* ARCH. SURG. 88: 688, Apr. 1964)

TABLE 2

ELECTROLYTE-ION CONCENTRATIONS
(in mEq/liter)

Fluid	*Cations*			*Anions*			
	Na	Ca	K	Cl	HCO_3	HPO_4	Protein
Plasma	142.	5.	4.5	103.	27.	2.	16.
Interstitial (ECF)	140.	3.5	4.5	112.	27.		1.5
Normal saline	145.			145.			
Lactated Ringer's	130.	4.	4.	111.	27.		

These same workers[5] later studied the changes in ECF volume caused by loss of blood alone without accompanying trauma and observed also the comparative effectiveness of three methods of treating the severe hemorrhagic shock which ensued. Red cell, plasma and ECF volumes were measured in a number of dogs before and after their exposure to a standard shock-producing hemorrhage. Each animal then was treated by one of the following methods: (1) return of all shed blood, (2) return of all shed blood plus plasma to correct the existing plasma deficit, (3) return of all shed blood plus repletion of the ECF with lactated Ringer's solution. The observed results are summarized in Table I.

As would be expected, all animals were in approximately the same state following hemorrhage with red cells reduced by nearly one-half but with a much smaller reduction of plasma volume due to a shift of ECF into the vascular system as blood volume fell. The final deficit of ECF was greater than what could be accounted for by that shift alone and indicated that a considerable volume of ECF was lost through sequestration in the tissues as failing capillary circulation caused increased capillary permeability.

In all animals the treatment restored red cell volume to normal and produced plasma volumes greater than normal. Thus in terms of blood replacement, all animals were treated adequately. In terms of survival, however, replacement of both blood and ECF losses gave much better results.

TABLE 3

50 DOGS WERE SUBJECTED TO IDENTICAL DEGREES OF HEMORRHAGE AND TRAUMA, THEN RANDOMIZED INTO 5 TREATMENT CATEGORIES

Treatment	*percent dead after* 24 hrs.	48 hrs.	72 hrs.
Return of all shed blood	80	80	80
Same, plus transfusion of donor blood*	80	90	90
Same, plus infusion of 5% dextrose solution*	50	60	80
Same, plus infusion of lactated Ringer's*	0	20	20
Homologous donor transfusion plus lactated Ringer's*	10	20	20

* Amounts of additional fluid based on 5% of body weight, approximately equivalent to 25% of normal ECF volume.

(from Wolfman, *et al.*, ARCH. SURG. 86: 869, May 1963)

These observations show clearly that even in hemorrhagic shock there is a serious loss of ECF and that blood replacement alone is not adequate treatment. In fact, there is small chance of survival when treatment is limited to blood and plasma only. Correction of the associated deficit of ECF is mandatory and lactated Ringer's solution is peculiarly suitable for this purpose. As shown in Table 2, its composition is virtually identical to that of ECF.

Studies very similar to those just described were done independently by Wolfman, *et al.*,[6] at the University of Michigan, with essentially the same results and conclusions. Their data are summarized in Table 3.

Regardless of the nature of the shock-producing insult its continuing presence leads to continuing losses of intravascular plasma volume through external losses and internal sequestration and the likelihood of exhausting the water and electrolyte reserves of the ECF reservoir steadily increases. The threat becomes even greater if the circulation is overloaded with salt-free infusions. The body's major store of sodium is the ECF and its depletion causes a corresponding impairment of the body's ability to maintain an effective circulating plasma volume. Even in the absence of significant trauma or hemorrhage, sodium deficit alone can cause a form of

circulatory failure known as "the sodium loss syndrome" for which the only effective treatment is the administration of enough water and sodium to replenish the ECF reservoir. This condition is completely resistant to treatment with blood or other colloids or pressor agents, as well as glucose-water infusions.

Confirmation of the concept that losses of water and salt from the ECF reservoir are responsible for final failures of blood volume and circulatory effectiveness has made it necessary to reappraise the old bugaboo of "salt retention." Salt has been the chief topic of contention throughout the whole history of parenteral fluid therapy. As long as it was believed that salt retention resulted from a specific defect of renal excretory function, it was naturally regarded as a potential threat to well-being and an indication for restricting salt intake. Now that it is apparent that salt is retained simply to correct an existing deficit caused by losses of ECF, the salt-retention process is seen to be a functional, restorative one rather than a pathological condition. This conclusion is justified by the findings of numerous recent studies.

Marks, et al.,[7] at the Boston Veterans Administration Hospital studied a number of patients undergoing major abdominal surgery. They were divided into three groups, two of which were given 120 mEq of sodium on the second preoperative day and 562 mEq on the day preceding operation. One of these groups also received 2 mg. of fluorohydrocortisone on the preoperative day. The third group received no sodium except that of the regular diet. All groups were given 154 mEq of sodium on the day of operation and daily for the next three days. The patients who were overloaded with sodium preoperatively retained relatively large amounts of it before they were operated upon and having done so excreted all sodium excesses quantitatively even in the immediate postoperative period. Those not previously prepared with additional sodium intake showed the typical postoperative salt retention. The authors considered it self-evident that such salt retention was merely the means by which the body corrected an existing salt deficit and that it in no way indicated any acute impairment of renal function.

In addition to their detrimental effects on the circulation, losses of ECF sodium and volume are responsible for the progressive decrease of urine output which accompanies shock and which, if uncorrected, progresses to renal failure and anuria. Evidence of the direct relationship between effective ECF volume and urine output has confirmed the long-standing empirical impression that dehydration, which is simply another name for ECF-deficit, is associated with oliguria. There continues to be some controversy concerning the exact manner in which the kidneys detect and respond to changes of ECF volume. It was thought for a time that the adrenal hormone aldosterone was a major factor in regulating the renal excretion of water. However, recent findings show that adrenal hormones play no significant role in volume regulation. The concept that the kidney is both the sensor and the reactor in mediating urine output proposed by Bresler[8] is as logical as it is simple. He suggested that the kidney's intrinsic ECF content presumably parallels that of the entire body and therefore any change in the latter is promptly reflected by a corresponding change within the kidney either in size or internal pressure. By thus monitoring the existing volume of functional ECF, the kidney is able to maintain whatever excretory activity is needed to preserve a normovolemic state as far as possible in both vascular and interstitial compartments. Deficits of ECF cause urine output to fall accordingly. Correction of these deficits causes urine output to resume at a normal rate.

Blood, as a body organ, consists of three separate parts with each subserving a specific function: the erythrocytes perform oxygen transport, plasma proteins provide colloid osmotic pressure and the aqueous electrolyte solution making up the greatest portion of the plasma provides the essential volume factor. Of these three, the volume function is not only the most vulnerable but the one which when impaired is the greatest hazard to the life of the organism. The primary cause of shock is volume failure rather than losses of red cells or proteins. A 50% reduction of blood volume is uniformly fatal not because red cells and proteins are decreased to that extent but because the volume is. The same reduction of proteins is no critical matter; it simply means that the protein level is approaching that at which edema begins in the nephrotic syndrome. As far as red cells and hemoglobin are concerned, Takaori and Safar[9] have recently reported survival of animals subjected to repeated hemorrhages with immediate volume replacement with Ringer's lactate solution, provided hematocrit levels did not fall below 20%.

Of these three primary functions of blood, the volume function is the only one possessing a reserve apparatus to enable it promptly to combat and overcome an acute threat to its integrity. Its large reservoir of ECF with a normal capacity of about four times that of the vascular system allows fluid to move promptly into the blood stream to correct for losses therefrom and thus keep an effective blood volume circulating. As long as this supply of reserve fluid lasts it continues to be withdrawn to compensate for both actual blood losses and for losses of edema fluid sequestered in the vicinity of traumatized areas. Not until the store of functional ECF is severely depleted does a critical hypovolemia develop within the vascular system to initiate the sequence of events which shock represents. Restoration of homeotasis, therefore, is not a matter of only replacing missing red cells and plasma proteins. Replacing the lost salt and water of the ECF is even more urgently required for as the experimental evidence already cited has shown treatment limited to blood and colloids alone is by no means the most successful.

Nothing that is being said should be interpreted as

meaning that blood transfusion has no real place in medical practice. Obviously blood is the only agent capable of correcting deficits of red cells, proteins and other essential blood elements. The point is that blood is not the only or the most essential agent for correcting deficits of blood volume and that correction of ECF deficits is also required before homeostasis can be restored.

Even though blood plasma and lactated Ringer's solution are almost identical in terms of electrolyte-content, the protein content of the former causes it to be reluctant to pass on its salt and water to its depleted ECF neighbor, particularly if there already exists a reduced intravascular volume. Thus neither blood nor plasma can do much to correct ECF deficits. They could be poured into the vascular system until it reached its bursting point without materially relieving the critical deficits of water and salt in the interstitial compartment.

Before resorting to the use of any "plasma expander" one should recall that the desired "expansion" effect comes solely from the ECF drawn into the vascular system by the increased intravascular osmotic effect. The very existence of a deficit of intravascular volume is evidence of exhaustion of the ECF reservoir and the very fact that these colloidal substances act to withdraw water from the ECF reservoir means that they cannot move out of the vascular system to correct an ECF deficit. (This may not be true, however, of some small-molecule agents now being used experimentally.) The plasma expanders ordinarily available may well aggravate the basic deficit and hasten the onset of terminal renal failure. Nor when sodium reserves become critically depleted can any benefits be achieved by infusing dextrose-water solutions. These also are more likely to hasten the onset of anuria than to promote diuresis.

Shock invariably is accompanied by metabolic acidosis because lactic and pyruvic acids accumulate as tissue perfusion and oxygenation become progressively less effective. This means, theoretically at least, that normal saline is not the ideal agent for supplying the needed salt and water because it provides a slight excess of acid ions. While it is possible to overcome this fault by judiciously combining saline and sodium bicarbonate solutions, in practice it is much easier to use lactated Ringer's solution, which simulates ECF closer than does any other preparation on the market.

In the past, some have been reluctant to administer a lactate-containing solution in the presence of an existing lactic acid acidosis. However, recently reported studies of McClelland, *et al.*,[10] show such fear to be groundless. They found in experimental animals that lactic acid blood levels are indeed directly correlated with mortality in untreated or inadequately treated subjects. However when severe hemorrhagic shock is treated with transfusion plus adequate amounts of lactated Ringer's solution, both blood lactate levels and pH are restored to normal levels. In fact, unless these abnormalities of blood chemistry are abolished there is small chance of survival. When treatment was limited to transfusion only, blood lactate levels consistently were four times higher than they were following treatment with blood plus lactated Ringer's solution and mortality rate increased accordingly. Thus it was again demonstrated experimentally that merely refilling the vascular system with blood is inadequate and virtually futile therapy.

TABLE 4

MEAN "SAVINGS OF BLOOD" IN RELATION TO AMOUNTS OF LACTATED RINGER'S SOLUTION ADMINISTERED TO PATIENTS UNDERGOING MAJOR GYNECOLOGICAL OPERATIONS

	Fluid-electrolyte Therapy					
	< 500 cc/hr		500-1000 cc/hr		> 1000 cc/hr	
Operative blood losses	No. of pts.	Mean savings (cc)	No. of pts.	Mean savings (cc)	No. of pts.	Mean savings (cc)
< 700 cc	32	75	31	392	30	427
> 700 cc	24	79	21	357	19	618

(from Trudnowski, JAMA 195: 547, Feb. 14, 1966)

In addition to such basic facts and concepts as these recent medical literature has contained many papers attesting to a growing awareness of the value of electrolytes in clinical practice. One by Trudnowski[11] is particularly significant because it was based on a backward look at events that took place spontaneously without any deliberate intention to conduct an experiment. He simply reviewed the records of the 24,176 patients who passed through the Postoperative Recovery Room of the Roswell Park Memorial Institute in Buffalo during the three-year period between March 1, 1961, and February 29, 1964. As it happened, a gradual change-over in fluid therapy practices took place during this period with 5% dextrose solution being used almost routinely at the outset and lactated Ringer's solution gradually supplanting it. The average amount of the latter administered per patient increased from 360 cc. to 1.30 liters and concurrently the over-all incidence of significant hypotension fell from 1.8% to 1.1% – a decrease of 30%. In patients undergoing general, thoracic, plastic and rectal surgery it fell from 2% to 0.8% – a decrease of 60%. Perhaps even more significant were data relating to patients undergoing major gynecologic operations summarized in Table 4.

The author defined "saving of blood" as the difference between the amounts of observed or calculated blood losses in the operating room and the amounts of blood needed to restore satisfactory circulatory status in the respective patients. As the use of electrolyte solution gradually supplanted that of dextrose-water solution, there was a corresponding increase in "savings of blood" and the author was favorably impressed by the fact that no patient was "over-transfused."

Late in 1965 a special unit was activated in the Walter Reed Hospital for study and treatment of cases of refractory shock. These represented patients already being

treated in the hospital but who were not improving under the standard regimen of transfusions, infusions, oxygen, vasoconstrictors, etc. A very recent paper by Hardaway, *et al.*,[12] reviewed the records of the first 19 patients admitted to that unit. In the 14 patients whose initial hematocrits were reported, they ranged from 22% to 68% and averaged 33%. Although all cases were in "refractory shock," blood volume was normal in three patients and well above normal in five others. From their intensive study of all aspects of intractable shock the authors concluded that (1) blood should be given only to the point of restoring normal red cell mass; (2) further fluid therapy should consist principally of aqueous electrolyte solutions; (3) since "the body has already transferred all the ECF into the blood that it could, to help expand blood volume, . . . this ECF must also be replaced;" (4) adequate fluid replacement requires using an amount of fluid considerably larger than normal blood volume and much larger than that of known losses of blood and other fluids; (5) "the best way to treat acidosis is by administration of fluid volume;" (6) oliguria is not a contraindication for using large volumes of saline solutions; on the contrary, using electrolyte solutions in adequate amounts increases urine output and prevents tubular necrosis; (7) vasoconstrictors have a detrimental effect in shock and are contraindicated; (8) severe shock always gives rise to clotting defects, manifested by hemorrhagic tendencies and more or less capillary bleeding.

The authors' data show plainly that they relied much more on electrolyte solutions than on blood to correct the continuing circulatory deficits in these patients with "refractory" shock. One exception was a case of advanced hepatic cirrhosis who failed to survive a shunt operation and transfusions totalling 43,500 cc. of whole blood. Of the other 18 patients, only 11 were given any further blood and one required a 1500 cc. phlebotomy. However, all patients were given comparatively large infusions of saline, averaging 4,160 cc. per patient. A few received small amounts of plasma and/or dextran. One patient was given Mannitol® and most had high dosages of steroids but the authors were unable to note any significant benefit attributable to either. Prior experience with similar cases had shown a mortality rate of about 70%, but in this series it was reduced to 31%.

Summary

The first half of this century saw concepts and practices in fluid therapy change from time to time in accordance with currently prevailing vogues.

Sound researches during the past decade have added many new basic facts and principles, have clarified the specific roles of the various components and structures of the body's fluid-system and have led to the formulation of rational guidelines governing the use of parenteral fluids.

The circulatory system consists of two inter-communicating, fluid-containing compartments, the vascular and the interstitial spaces. The latter contains the extracellular fluid (ECF) which moves freely into and out of the vascular space as needed to maintain an optimum and fairly constant volume of circulating blood.

Homeostasis, or the preservation of a stable internal environment, is achieved when normovolemic conditions prevail in both these fluid compartments. Both hemorrhage and trauma cause ECF to move from the ECF reservoir into the vascular space to replace losses of circulating volume due to either external blood loss or internal accumulations of edema. If such withdrawals of ECF are extensive enough to deplete the supply available to the body, it is thereby deprived of its normal means of maintaining an effective circulating volume.

A deficit of circulating volume is a greater threat to survival than is a comparable deficit of either red cells or plasma proteins. A deficit of circulating volume is due primarily to losses of plasma water and electrolytes and such losses become particularly ominous when the ECF reservoir is exhausted. Deficiencies of red cells and plasma proteins can be overcome by transfusions but these are relatively ineffective in correcting deficits of salt and water. To accomplish the latter, those substances themselves must be given in adequate amounts. The composition of lactated Ringer's solution make it peculiarly useful for that purpose.

True volume replacement requires refilling both of the fluid compartments of the body with fluid comparable to that which it normally contains. In the presence of shock, the amount of isotonic electrolyte solution required to refill the ECF compartment is much greater than the amount of blood required to fill the vascular compartment.

Laboratory and clinical evidence has been cited from the literature to show that treatment limited to blood replacement alone is relatively futile.

References

1. Coller, F. A., Campbell, K. N., Vaughan, H. H., Iob, L. V. and Moyer, C. A.: Postoperative Salt Intolerance. Ann. Surg. 119: 533-542, 1944.
2. Albert, S. N.: Blood Volume, 1963 (C. C. Thomas, Springfield, Ill.)
3. Lillehei, R. C., Longerbeam, J. K., Bloch, J. H. and Manax, W. G.: The Nature of Irreversible Shock. Ann. Surg. 160: 682-710, Oct. 1964.
4. Shires, G. T., Williams, J. and Brown, F.: Acute Changes in Extracellular Fluid Associated with Major Surgical Procedures. Ann. Surg. 154: 803-810, Nov. 1961.
5. Shires, G. T., Coln, C. D., Carrico, J. and Lightfoot, S.: Fluid Therapy in Hemorrhagic Shock. Arch. Surg. 88: 688-693, Apr. 1964.
6. Wolfman, E. F., Neill, S. A., Heaps, D. K. and Zuidema, G. D.: Donor Blood and Isotonic Salt Solution. Arch. Surg. 86: 869-873, May 1963.
7. Marks, L. J., Gibson, R. B. and Oyama, H. T.: Effect of Preoperative Isotonic Expansion of Extracellular Fluid Volume on Postoperative Renal Sodium Excretion. Surgery 54: 456-462, Sept. 1963.
8. Bresler, E. H.: Aspects of Volume Regulation. Anesth. & Analg. 46: 84, 1967.
9. Takaori, M. and Safar, P.: Treatment of Massive Hemor-

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Zieve's Syndrome

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For the past six decades hemolysis has been known to be associated with certain cases of cirrhosis, especially in the presence of splenomegaly. In 1918 Feigl, while investigating serum lipids in patients with alcoholic fatty livers, noted lipemic serum in six of 30 of these patients.[1] In 1958 Zieve described an entity in which jaundice, hemolytic anemia, and hyperlipemia coexisted in 20 patients with alcoholic fatty liver and mild cirrhosis without splenomegaly.[1]

The following is an illustrative case history which will be followed by a discussion of *Zieve's Syndrome:*

Case History

T. H., a 42-year-old negro male, was admitted to the VA Hospital, Bronx, New York, with a 24-hour history of severe right abdominal pain. The past history revealed that he had been drinking heavily of alcohol for several days prior to admission. Physical examination revealed a temperature of 101° F., moderate right abdominal tenderness, and two fingerbreadth hepatomegaly. The spleen was not palpable. On drawing blood for routine laboratory studies it was noted that the serum was markedly lipemic (milky). Laboratory work yielded the following admission values: Hemoglobin, 16.0 Gm. %; WBC, 11,850 with 92% neutrophils; blood sugar, 102; glycosuria, 4+; alkaline phosphatase, 9.7; total cholesterol, 700; amylase, 127; prothrombin time, 85%; total bilirubin, 2.1.

The patient was kept fasting and observed. Within 24 hours after admission the pain increased in intensity and localized in the right lower quadrant with associated marked right rectal tenderness. Approximately 48 hours following admission an emergency appendectomy was performed. At surgery a small amount of white exudate was found in the right gutter which on culture was sterile. Pathological examination of the specimen revealed an "appendix with no significant lesion." From the first postoperative day, the patient had a ravenous appetite though he was not fed for nine days because of a persistent ileus. Scleral icterus was noted on the third hospital day.

During the four postoperative weeks a hemolytic anemia was observed as the hemoglobin fell to 9 Gm. %, hematocrit to 27%, and the reticulocyte count rose to 5.8%, WBC to 17,000 with a left shift, sedimentation rate to 61 (29 normal), bilirubin to 7.4 mg. % with a 2.4 direct reacting, bromsulfalein to 48% retention at 45 minutes, alkaline phosphatase to 9.7 Bodansky units, urine urobilinogen to 1/80, SGOT to 95 units, and amylase to 226 units (slightly elevated). All these abnormal laboratory values gradually returned to normal by the fifth week postoperatively. A liver biopsy done three weeks postoperatively showed fatty changes and mild portal fibrosis. Glycosuria was absent after the third hospital day.

The following laboratory studies were either negative or normal: cephalin flocculation, thymol turbidity, total protein and albumin, BUN, serum and urinary lipase, stool guaiac, sickle cell preparation, LE preparation, latex fixation, heterophile, ox cell and cold agglutinins, Coombs test (direct), platelet count, and hemoglobin electrophoresis (type A); and G-I series.

The patient made an uneventful and complete recovery and returned to his usual occupation as a hospital chef. No blood transfusions were given.

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Discussion

Zieve's patients most commonly presented a history of recent heavy alcohol intake and relatively acute onset of anorexia, nausea, vomiting, diarrhea, and malaise. Upper abdominal pain was always present but varied in severity. Low-grade fever and jaundice were common. Hepatomegaly was often found on admission but receded rapidly. As a rule there was no splenomegaly. Telangiectasia were common. All these patients had a ravenous appetite and all improved rapidly in the hospital.

Chemical abnormalities became manifest in the first or second week of the disease. Most characteristic were the following: Hemoglobin depressed; reticulocyte count elevated; sedimentation rate elevated, often very high; abnormal osmotic fragility of the red blood cells; bromsulfalein normal or nearly normal; serum cholesterol markedly elevated.[2,3] Ström, a Swedish investigator, reported a case of Zieve's syndrome in 1963 in which the total cholesterol rose to 1742 mg. %. He suggested that the abdominal pain may be related to the disturbances of lipid metabolism in the patient's nerves and nerve cells.[4] In half of all cases lipemia is noted initially on admission. Total bilirubin is elevated and has been recorded as high as 43 mg. %. The remaining liver chemistries were generally only mildly disturbed. Pathological examination of the liver biopsy revealed portal cirrhosis and fatty infiltration.

The more chronic and marked the cirrhosis, the less marked is the lipemia. Once the patient stops drinking, improvement occurs.

This complex of signs and symptoms is to be distinguished from the entity of hemolytic anemia associated with splenomegaly. Beside the obvious differences, namely splenomegaly (± portal hypertension) and the absence of lipemia (and in fact frequently hypolipidemia), these patients have poor appetites, no fever, rare abdominal discomfort, very abnormal bromsulfalein retention, little bone marrow activity, and low or normal total cholesterol levels. These patients have a chronic hemolytic process related to a more chronic illness of the liver and the involvement of the spleen in the hemolytic state. Often portal hypertension is present in cirrhosis at this stage.[2] In contrast, in the anemia associated with hyperlipemia there is the implication that some abnormality of, or related to, the serum lipids plays a role in the hemolysis.

The mechanism of this anemia has not been elucidated. Several ideas are current however. Losowsky in 1963 studied eight patients with Zieve's syndrome. He found high concentrations of plasma triglycerides, phospholipids, and total cholesterol in the acute phase of the disease.[5] As the patients improved, lipids returned to

normal. In one recovered patient, he provoked an increase of triglycerides and phospholipids by administration of pure ethyl alcohol. He also found plasma lipoprotein lipase activity below normal in six of these eight patients after giving them Heparin injection as a lipid clearing stimulus. On the other hand, eight patients acutely intoxicated but without lipemia had normal values of plasma triglycerides, phospholipids, total cholesterol, and lipoprotein lipase activity. He concluded that at least one factor involved in alcoholic hyperlipemia must be low lipoprotein lipase activity.

Kessel (as reported by Ström) has suggested that there is a simultaneous damage of the pancreas causing the hyperlipemia and he cites the temporary severe hypercholesterolemia found in rats given cobaltous chloride that partly destroys their alpha cells.[5]

Zieve himself discounts the possibility of decreased lipid clearance by Heparin-like substances, or albumin deficiency, as many cirrhotics with far more severe hypoalbuminemia are not lipemic. Nutritional deficiency is ruled out because the syndrome is not generally associated with malnutrition but rather is of more acute onset and of brief duration.

Zieve speculates that there may be an increased mobilization of fat going to and from the liver during the early phase of healing of acute fatty liver in acute intoxication. In addition, the red blood cells are altered – they become more fragile. Zieve postulates that the red blood cells are altered by lysolecithin, only a small amount of which will affect red blood cells. While lecithin is the normally predominant serum phospholipid, replacement of one fatty acid unit with an hydroxyl group will produce lysolecithin and this conversion may be accomplished by minute amounts of pancreatic lipase which itself actually has a clearing effect on the serum.[1] One need have only a trace of circulating pancreatic lipase in the presence of elevated lipids to produce significant hemolysis. Unfortunately, serum lipase assays have not yet been made under the circumstances of the active disease process. There has been no evidence of pancreatitis in these patients, as far as could be determined by amylase levels.

Zieve suspects that most alcoholics who reach an advanced stage of cirrhosis pass through this hyperlipemic phase, albeit unnoticed in the majority of cases. He regards this syndrome as characteristic of the inverse relationship between severity of cirrhosis and ability to mobilize lipids.

Conclusion

Since Zieve's description of this syndrome in 1958, ten additional reports have appeared from Japan, Sweden, Hungary, France, Italy, Spain and the United States.

Knowledge of this syndrome may aid the physician to interpret clinical signs and symptoms of a non-surgical problem that may masquerade as an acute abdomen. In Zieve's own series, an exploratory laparotomy was performed for suspected choledocholithiasis and was considered in several other patients for symptoms suggestive of appendicitis. The medical investigator who is fortunate enough to recognize such a case at its presentation may take that opportunity to study and further elucidate the mechanism of the disease.

References

1. Zieve, Leslie: Jaundice, hyperlipemia and hemolytic anemia: A heretofore unrecognized syndrome associated with alcoholic fatty liver and cirrhosis. Ann. Int. Med., Vol. 48: 471-496 (1958).
2. Zieve, Leslie, and E. Hill: Two varieties of hemolytic anemia in cirrhosis. Southern Med. J., Vol. 54: 1347-1352 (1961).
3. Zieve, L. and E. Hill: Hemolytic anemia in cirrhosis. Southern Med. J., Vol. 52: 903-911 (1959).
4. Strőm, J.: Zieve's syndrome. Report of a case. Acta Med. Scand., Vol. 174: 219-222 (1963).
5. Losowsky, M. S., D. P. Jones, C. S. Davidson, and C. S. Lieber: Studies of alcoholic hyperlipemia and its mechanism. Am. J. Med., Vol. 35: 794-801 (1963).

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rhage with Colloid and Crystalloid Solutions. J.A.M.A. 199: 297-302, 30 Jan. 1967.
10. McClelland, R. N., Shires, G. T., Baxter, C. R., Coln, C. D. and Carrico, J.: Balanced Salt Solution in the Treatment of Hemorrhagic Shock. J.A.M.A. 199: 830-834, 13 Mar. 1967.
11. Trudnowski, R. J.: Hydration with Ringer's Lactate Solution. J.A.M.A. 195: 545-548, 14 Feb. 1966.
12. Hardaway, R. M., James, P. M., Anderson, R. W., Bredenberg, C. E. and West, R. L.: Intensive Study and Treatment of Shock in Man. J.A.M.A. 199: 779-790, 13 Mar. 1967.

Sliding Hiatal Hernia: Advantages of the Transabdominal Composite Operation

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Sliding hiatal hernia can be repaired with a reasonable chance of success through either an abdominal or a transthoracic incision. In from 25% to 50% of cases there is perhaps a compelling reason for using either one or the other approach. Concurrent cholelithiasis, duodenal or gastric ulcer, solitary pulmonary lesions, "upside-down stomach" and esophageal stricture would be instances which have occurred at this hospital. In the ordinary case, however, the transabdominal operation is to be preferred, and this will be demonstrated in the following clinical survey.

Clinical material. In the past 15 years 47 patients with hiatus hernia have been subjected to repair utilizing the Allison technique of repair of the crural defect posterior to the esophagus and excision and resuturing of the attenuated phreno-esophageal ligament. Because of the characteristics of the clinical material available at this hospital (adult male veteran), a very high percentage of these patients have been either obese, chronic alcoholics, or have had concurrent peptic ulcer disease (Table No. 2). In addition, in contrast to most other reported series, a higher percentage of our patients have had as presenting symptoms a history of major gastrointestinal bleeding (Table 3). Likewise, the number of our patients who have had x-ray or esophagoscopic evidence of esophagitis has been higher than that generally reported. Postoperative convalescence generally has been rapid, and the incidence of major complications has been satisfactorily small (Tables 4,5). During the early years of this reported series, the surgical approach was usually transthoracic as described by Allison.[1] A few other patients during this same period were treated palliatively with phrenic crush, subtotal gastrectomy, pyloroplasty, or pyloroplasty and vagotomy. As anatomical repair of defect was not carried out in these patients they have not been included in this review. Two other patients with esophageal ulceration and severe stricture were subjected to esophagogastrectomy, vagotomy, and pyloroplasty by a thoraco-abdominal approach during this same period. As repair of hiatus hernia was not carried out they also have been omitted from the study. The first abdominal repair combined with pyloroplasty was carried out in February, 1958; and the first abdominal repair combined with pyloroplasty and vagotomy was carried out in June, 1960. Since that time I have increasingly come to prefer the transabdominal composite operation as the procedure of choice because of the clearly superior postoperative results. Although repair of hiatus hernia, carried out from either above or below, has generally been followed by immediate satisfactory results, follow-up studies in our patients have shown, similarly to other reported studies,

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TABLE 1

TECHNIQUE OF OPERATIVE REPAIR
(47 Consecutive Cases*)

Thoracic	Repair	16
	Repair with vagotomy	2
Abdominal	Repair	3
	Repair with vagotomy	1
	Repair with pyloroplasty	2
	Repair with vagotomy-pyloroplasty	20
	Repair with vagotomy-antrectomy	3
		47

*3 patients had had gastric resection (2 with vagotomy) for duodenal ulcer prior to repair of hernia.

TABLE 2

MISCELLANEOUS HISTORICAL AND PHYSICAL DATA
47 Patients

	No.	*Percent*
Patients over 40	43	91.7
Significant obesity	22	46.8
Significant alcoholism	21	44.7
Peptic ulcer (gastric ulcer 1)	13	27.7
Cholelithiasis	5	10.6
History of crushing thoraco-abdominal injury	4	8.5
Atrophic gastritis (recurrent bleeding)	1	2.1

TABLE 3

MAJOR PRESENTING SYMPTOMS
47 Patients with Sliding Hiatal Hernia *1

Bleeding and/or esophagitis	34	72.3%
Bleeding mild 8) — 53.2%		
Bleeding severe 17) (1-12 transfusions)		
*2 Esophagitis 15 (31.9%)		
Typical dyspeptic syndrome without complications	8	17.0
Angina treated by nitroglycerine preoperatively	3	6.4
Obstructive symptoms (paraesophageal H.H.)	2	4.2

*1 Esophagoscopic examinations and esophageal dilatations have been carried out by Drs. Pierre Provost, Frank Spellman, and Roger Metcalf.

*2 Two patients required esophageal dilatation preoperatively; three patients required esophageal dilatation postoperatively; three patients had gross esophageal ulceration.

TABLE 4

POSTOPERATIVE COMPLICATIONS		
Wound infections (minor)	3	
Esophageal leak with empyema	1	
Pneumonia	1	
*Cardiac arrest in Recovery Room (Diffuse myocardial fibrosis) Age 56	1	
Gastric bleeding 8th p.o. day	1	
*Recurrent gastric hemorrhage 11th p.o. day (diffuse atrophic gastritis, subtotal gastrectomy, expired) Age 77	1	
Intermittent diarrhea (1½ months)	1	
	10	(22.2%)
*Deaths	2	(4.2%)

TABLE 5

MINOR POSTOPERATIVE SEQUELAE		
Dysphagia, mild	15	
Gastric retention (6 days) (Repair & vagotomy alone)	1	
Intercostal neuralgia	9	
Mild 7		
Severe 2*		

*(Intercostal nerve section required)

a disappointingly high rate of recurrence. In the 45 patients who have been followed there have been 12 recurrences, 26.7%. Four of these patients have shown evidence of recurrence only by radiological examination, but these four have remained free of symptoms. Eight patients, or 17.8%, had recurrence of symptoms. Four of this group also had x-ray evidence of recurrence to some degree. In one of the eight symptomatic patients it is believed that these symptoms were the result of hiatus hernia alone. The other seven patients were either chronic alcoholics (two) or had duodenal ulcer symptomatology and/or proven hyperacidity (five). Two of this latter group were also chronic alcoholics. If we then separate from the entire group of 47 patients who have been subjected to either transthoracic or transabdominal repair two smaller groups, one with transthoracic repair alone (16 patients) and another with transabdominal composite operation alone (23 patients) the difference in postoperative recurrence is striking (Table 6).

Historical notes. Sliding hiatal hernia is now known to be a common anatomical defect. It may be discovered at any age, it occurs twice as commonly in women as in men, and it has been estimated that as many as one third of all people over the age of 40 have some degree of hiatal defect. Less than one quarter of these people, however, will have significant symptoms, and perhaps one quarter of the patients seen by the physician will be referred to the surgeon for repair. In recent years operative repair of this defect has been carried out more frequently for a number of reasons. These would include an increased clinical awareness of the problem, more accurate diagnosis through improved radiographic techniques, improved anesthetic and surgical methods, and greater knowledge of the physical and anatomical principles involved. In addition, there has been wider recognition of the fact that it is more easily, safely, and effectively carried out earlier in the clinical course of the disease than it is after complications such as peptic ulceration, severe stricture, or massive hemorrhage have developed.[5,16]

Thoracic or abdominal operation. Much of the credit for the improvement of postoperative results of the treatment of this condition in recent years is due to the popularization and systematization of the repair along Allison's principles by the transthoracic technique. However, it wasn't long before it was recognized that the same surgical principles could be applied to a transabdominal approach.[3,15] Admittedly the transabdominal approach is more difficult in the occasional obese patient who is unable to lose weight prior to surgery. But certain advantages of transabdominal approach weigh heavily in its favor such as the ability to explore the abdomen, remove a gallbladder, or treat peptic ulcer disease. The transthoracic approach is now reserved at this hospital for patients with extremely large hiatal defects such as paraesophageal hernia (upside-down stomach) or those patients with severe associated esophagitis and stricture which might require concurrent resectional surgery. Other reasons for the transthoracic approach during this period were the need to carry out a transthoracic vagotomy in one and resectional pulmonary surgery in another. One complication which has reportedly occurred in patients operated upon by the transthoracic technique described by Allison is disruption of the diaphragmatic counterincision. This step in the procedure has now been abandoned by some surgeons.[9] A second disadvantage has been the frequency of wound pain and intercostal neuralgia. This has been experienced in 9 of our 18 patients but has generally been mild and

TABLE 6

HIATUS HERNIA: POSTOPERATIVE RECURRENCE

	Patients Followed	*Recurrent Symptoms*	*Percent*	*X-ray Evidence alone*	*Percent*	*Total*	*Percent*
All Cases	45	8	17.8	4	8.9	12	26.7*
Transthoracic Repair (alone)	16	6	37.5	2	12.5	8	50
Transabdominal composite op.	23	1	4.3	1	4.3	2	8.7

*Of the 12 patients with recurrent signs and symptoms, 5 had either peptic-ulcer disease or demonstrable hyperacidity; 4 patients had chronic alcoholism.

of short duration. Two patients operated early in the series had severe intercostal neuralgia requiring a secondary section of the nerves involved. We now routinely divide these nerves.

Anatomy of the esophageal hiatus. As only a small percentage of the patients with hiatus hernia have symptoms severe enough to warrant surgical treatment, we must assume that in those asymptomatic people either the gastroesophageal closing mechanism remains competent or there is a low level of gastric acid secretion. To correct the incompetent sphincter mechanism in those people who are symptomatic Allison has shown the importance of the integrity of the phrenoesophageal ligament to the maintenance of the esophageal closing mechanism. This principle has been confirmed in recent years by manometric balloon studies.[19] The phrenoesophageal ligament is composed of two leaves of tissue, an ascending leaf which is a continuation of the endothoracic fascia and a descending leaf which is a continuation of the endoabdominal or transversalis fascia. These two fascial layers decussate with the muscle wall of the esophagus, particularly with the thickened area of circular muscle fibers at the level of the lower esophageal sphincter.[5] By suturing the remnants of the ascending leaf of the phrenoesophageal ligament at its attachment to the esophagus to the transversalis fascia on the under surface of the hiatal sphincter, one brings the squamocolumnar mucosal junction below the diaphragm. The other major principle of the Allison operation involves repair of the defect in the crural muscles posterior to the esophagus. Anomalous variations in the muscular sling contributed by the crura have long been recognized but have recently been re-emphasized, and recent studies have shown that in up to 50% of the cases muscle fibers from both the left and the right crus contributed to the esophageal sling.[17,18] In other cases either small amounts or no muscular tissue at all has been found to lie between the esophagus and the aorta. The esophagoaortal hernia described by Humphreys may not be as rare as it was once considered to be, for within recent years we have come across four such cases in our own series. In most of our earlier cases a description of the anatomical defect found at operation was not recorded in the operation report.

Reflux esophagitis. The marked sensitivity of the esophagus to acid gastric juice has been recognized for more than 100 years, and many observers in years gone by have described patients with peptic ulceration in the distal esophagus.[10] In more recent years a syndrome has been described which has been called variously peptic esophagitis,[11,23] reflux esophagitis,[1] and regurgitative esophagitis.[20] In most instances it has been recognized that this syndrome is part of the clinical picture of sliding hiatal hernia. In other instances an insufficiency of the lower esophageal sphincter has been described without radiologic evidence of hiatal hernia.[13] With careful radiological techniques including cinefluorography my guess is that many patients in this group would be found to have some degree of hiatal herniation, and it may well be that this is merely the first stage in the development of hiatal hernia.

Unfortunately, however, anatomic repair of the hernia and correction of the imcompetent esophageal-cardiac closing mechanism has not always been associated with complete symptomatic relief. It has been pointed out that many of the symptoms in these patients are due to peptic esophagitis, and it has also long been known that a large number of people who have hiatus hernia either have demonstrated hyperacidity or evidence of concurrent peptic ulcer disease. The persistence of peptic ulcer symptoms in patients treated by the Allison technique either through the chest or through the abdomen has led a number of surgeons to modify the procedure by adding steps calculated either to diminish gastroesophageal reflux by improving gastric drainage and decreasing the antral phase of gastric secretion, or to lower gastric secretion by nerve section. Gastric resection, pyloroplasty, and vagotomy with a drainage procedure without concomitant hernia repair had previously been tried in the treatment of peptic esophagitis with considerable success.

The addition of pyloroplasty alone to the Allison type repair has not in itself been sufficient. Vagotomy alone when added to repair of hiatus hernia had been found to be an effective method of treatment by Hinton.[11] Later, gastric resection was included by a number of authors. Finger dilatation of the area of stricturing was also found to be of value.[2] And more recently it has become popular to include both vagotomy and a drainage operation with the Allison type of transabdominal repair. In the event that the duodenum does not lend itself to pyloroplasty, gastroenterostomy or antrectomy (with either a Billroth I or Billroth II anastomosis) has been included. These techniques have been called the combined operation[12,7] or balanced operation.[4] Composite operation may, however, better describe the procedure as one essentially composed of several distinct parts.

Advantages of the composite operation. There are a number of advantages in carrying out this operative procedure. When the transabdominal approach is used division of all soft tissue in the paraesophageal region permits more adequate exposure of the pathology involved. The crura are more clearly visible, the terminal esophagus having been cleaned of soft tissue is smaller, and a more adequately snug closure of the crura posterior to the esophagus is permitted. Repair is carried out so as to permit either a finger to be placed alongside the compressed esophagus or a Kelley clamp to be placed posteriorly between the crura and the uncompressed esophagus. Scrimger in 1931[14] pointed out that the division of the vagi permitted mobilization of the esophagus, and when this is done few patients will be found actually to have a so-called short esophagus. In addition, complete division of the soft tissue in this area divides the descending leaf of the phreno-esophageal ligament

in such a way as to permit more careful suturing of the esophagus to the inferior surface of the hiatal ring. Division of the triangular ligament of the left lobe of the liver is not essential for adequate exposure and is an unnecessary step. At the same time, by carrying out a complete vagotomy the cephalic phase of gastric secretion is abolished, and the hazards of future progression of peptic esophagitis are minimized. The future development of peptic ulcer disease is also made unlikely. Whereas it is possible to get by with a vagotomy alone[11] through prevention of gastric atony by prolonged intubation or gastrostomy, there is no harm and there are obvious advantages in concurrently carrying out a drainage procedure such as pyloroplasty. "Dumping" has not been a problem, and diarrhea has been infrequent. Several of our patients have had loose stools for one or two weeks postoperatively. One patient, a chronic alcoholic, complained of intermittent diarrhea for about 1.5 months, during which time it gradually lessened in severity and finally disappeared altogether. Finally, the metabolism of fat, carbohydrate and protein has now been shown not to be materially altered by vagotomy.[22]

Actual pyloroduodenal disease, gastric hyperacidity, and peptic esophagitis have been real factors in the series just presented. Thirteen out of the 47 operated patients (27.7%) had had peptic ulcer disease prior to surgery. And 5 of the 12 patients with postoperative recurrence (41.7%) had symptoms suggesting peptic ulcer and/or demonstrable high acidity. All told then we see that 18 (38.1%) of the 45 patients followed have had symptoms related to gastric hypersecretion at some time during their clinical history. Casten, et al.,[7] found a peptic-ulcer incidence of 50% in a similar series. They also emphasized the fact that a large number of their patients had hyperacidity. The association of peptic-ulcer disease with hiatus hernia had also been noted by many others.

Finally, as the major presenting symptom in three of our patients has been the recurrent vomitus of bile (these three patients had had gastric resection previously, two with vagotomy) it is apparent that alkaline regurgitation can also be quite irritating. It is recommended, therefore, that whenever definitive gastric surgery, with or without vagotomy, is carried out, a search for hiatus hernia be made at the same time; and if one is found, a repair should be performed. If this is carried out, I believe that the incidence of postgastrectomy sequelae will be lessened. This should particularly be done after transabdominal vagotomy as associated injury to the phrenoesophageal ligament may tend to result in incompetency of the esophagocardiac sphincter.

Conclusions

A review has been carried out of all the patients with sliding hiatal hernia treated by transabdominal or transthoracic repair in accordance with Allison's major principles in the past 15 years.

The advantages of the transabdominal composite operation have been described.

References

1. Allison, P. R.: Reflux esophagitis, sliding hiatal hernia and anatomy repair. Surg. Gynec. and Obst. 92: 419-431, 1951.
2. Bartlett, M. K., Waddell, W. R., Faxon, H. H.: Treatment of reflux esophagitis with stricture. New Eng. J. Med. 262: 551-557, 1960.
3. Beardsley, J. M.: Transabdominal repair of esophageal hiatus hernia. Ann. Surg. 149: 498-507, 1959.
4. Berman, J. K., and Berman, E. J.: Balanced operations for esophagitis associated with esophageal hiatal hernia. Arch. Surg. 78: 889-896, 1959.
5. Blades, B., and Hall, E. R.: The consequences of neglected hiatal hernia. Ann. Surg. 143: 822-832, 1956.
6. Brintnall, E. S., Blume, R. H., and Tidrick, R. T.: Late results of hiatus hernia repair. Amer. J. Surg. 101: 159-163, 1961.
7. Casten, D. F., Bernbang, A., Nach, P. J., and Spinzia, J.: A physiological basis for the surgical treatment of sliding esophageal hiatal hernia. Surg. Gynec. and Obst. 117: 87-93, 1963.
8. Dillard, D. H.: Esophageal sphincter and reflux. Surg. Clin. No. Amer. 44: 1201-1209, 1964.
9. Effler, D. B.: The diaphragmatic counter incision. Jou. Thoracic & Cardiovasc. Surg. 49: 669-676, 1965.
10. Eisenberg, M. M., and Woodward, E. R.: Hernioplasty, vagotomy, and drainage procedure – the management of hiatal hernia. Current Surgical Management Vol. III, page 227, 1965.
11. Hamperl, H.: Peptische Osophagitis Verhandl. Deutsh. Path. Gesellsch 27: 208, 1934, referred to by Winkelstein, A.: Peptic esophagitis: new clinical entity. J.A.M.A. 104: 906-909, 1935.
12. Herrington, J. L.: Treatment of esophageal hiatal hernia. Arch. of Surg. 84: 379-389, 1962.
13. Hiebert, C. A., and Belsey, R.: Incompetency of the gastric cardia without radiologic evidence of hiatal hernia. Jour. of Thoracic and Cardiovascular Surg. 42: 352-362, 1961.
14. Hinton, J. W., and Davis, D. A.: The management of massive hemorrhage from the gastrointestinal tract not due to peptic ulcer. Surg. Clin. No. Amer. 29: 317-321, 1949.
15. Hornberger, H. R.: Abdominal repair of large hiatus hernia. Jour. of the Maine Med. Assoc. 51: 50, 1960.
16. Humphreys, G. H., II, Ferrer, J. M., Jr., and Wiedel, P. D.: Esophageal hiatus hernia of the diaphragm. J. Thoracic Surg.: 34: 749-778, 1957.
17. Listerud, M. B.: Details of interest and controversy in the anatomy of the esophageal hiatus and hiatal hernia. Surg. Clin. No. Amer. 44: 1211-1216, 1964.
18. Listerud, M. B., and Harkins, H. N.: Variations in the muscular anatomy of the esophageal hiatus: based on dissections on 204 fresh cadavers. West J. Surg. 67: 110-113, 1959.
19. Michelson, E., and Siegel, C. I.: The role of the phrenicoesophageal ligament in the lower esophageal sphincter. Surg. Gynec. and Obstetrics 118: 1291-1294, 1964.
20. Schmidt, H. W.: Regurgitant ulceration at the esophagogastric junction. Proc. Staff Meet. Mayo Clinic 29: 153-163, 1954.
21. Scrimger, F., quoted by Berman, J. K., and Berman, E. J.: Balanced operations for esophagitis associated with esophageal hiatal hernia. Arch. Surg. 78: 889-896, 1959.
22. Tucker, F. H., Barnett, W. O., and Goodrich, J.: The influence of various degrees of vagotomy upon fat, carbohydrate, and protein absorption following pyloroplasty. Surg. Gynec. & Obst. 118: 1281-1285, 1964.
23. Winkelstein, A.: Peptic esophagitis: new clinical entity. J.A.M.A. 104: 906-909, 1935.

An Unusual Cause of Pain

A Case Report

PIERRE E. PROVOST, M.D.*

CASE REPORT

O. N., a 31-year-old male, was admitted to the Veterans Administration Center on April 3, 1967, with the admitting diagnosis of chronic, recurrent sinusitis. His chief complaint was left-sided headaches, mostly over the left cheek, lateral to the left orbit, and over the left eye. He was seen elsewhere during March prior to admission here and a diagnosis of chronic upper respiratory infection including the teeth, tonsils, pharynx, and sinuses was made. He was given antibiotics for one month and the recommendation following this was that he should have his teeth extracted. Approximately three weeks prior to admission to this hospital he was sent to a dentist and extractions were begun. Two molars and two bicuspids were extracted from the left mandible. The patient was then referred to this hospital for the completion of the extractions and for the treatment of his sinus disease.

A review of the patient's past history revealed that in 1956, while teaching recruits to fire rifle grenades, a grenade exploded at the end of his rifle and blinded him. An enucleation with implant of his left eye was performed. His right eye is still present but it is blind.

On admission, the main subject of the patient's conversation was the extraction of his teeth. X-rays of his teeth were taken, however, and those remaining were noted to be in excellent condition with the exception of a few minor cavities which are now in the process of being filled. A partial denture will be made at a later date to fill the gap caused by the previous extractions. X-rays of his sinuses showed no disease but did reveal a large piece of shrapnel in the left orbit lateral to the implant.

The foreign body was removed from the left orbit on April 20, 1967. By May 24, 1967, the patient stated that the pain by his left orbit, over his left eye, and over the cheek was gone. As of May 24, 1967, the day on which this report is made, the patient reported that he is free of headaches or other complaints.

In view of the above, it is the belief of the author that the close proximity of the foreign body to a freely movable implant undoubtedly was the probable cause of pain.

Two x-rays are included, one taken posteriorly-anteriorly and the other laterally, to show the relation of the foreign body to the implant.

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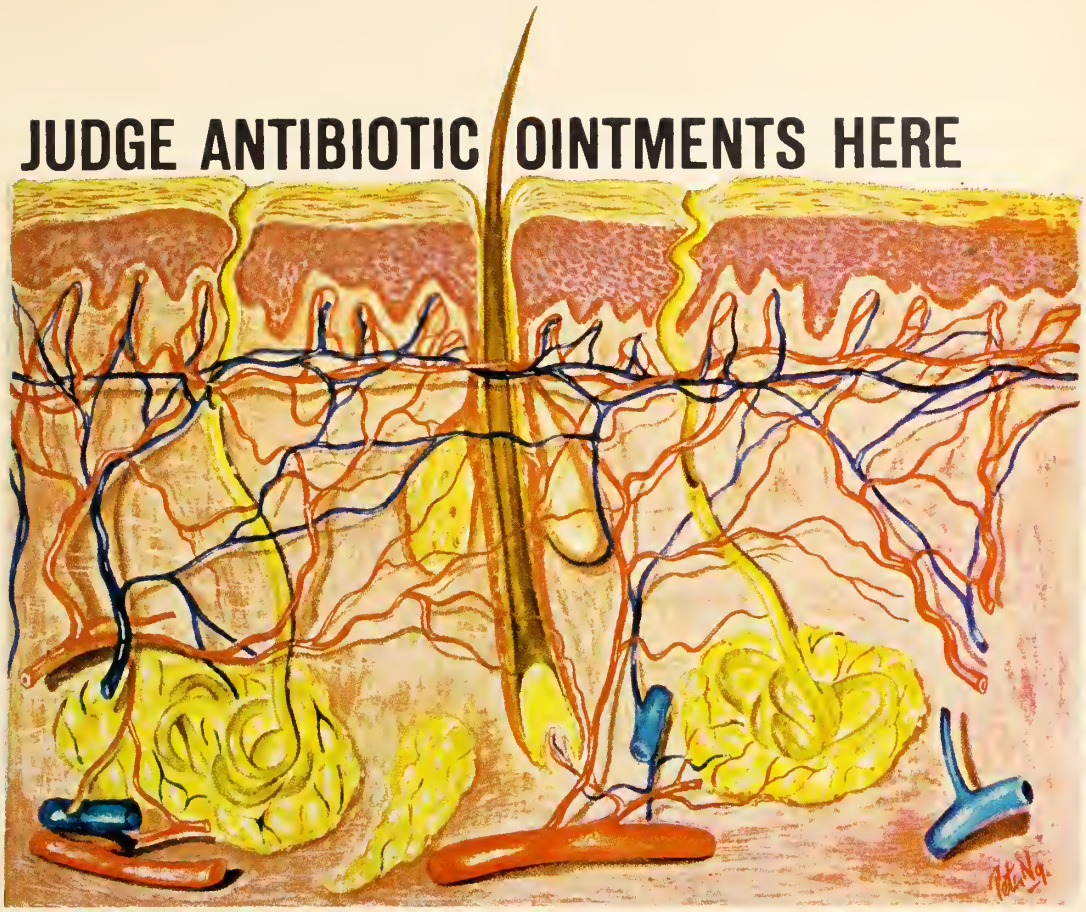


Fig. 1. P-A view of skull showing relationship of foreign body to implant.



Fig. 2. Right lateral view of skull showing same relationship.

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ne family physician is rarely given e diagnostic luxury of a classic, xtbook "anxiety state." Most often must probe for anxiety masked by functional disorder—or which exacbates a somatic problem. Doubleind evaluations have demonstrated at Mellaril can be a significant adnct in the treatment of such patients.



3 The patient under s uational stress.
llaril helps the patient deal with sses of everyday life. Nonhabitug, it can be given for extended pe- ds of time. It does not "separate" patient from practical problems pressures, does not induce euphoor a fuzziness which can compro- ise the ability to cope with reali- ies. Rather, it helps the patient move more competently in his daily world by eliminating useless tension, by allowing him to conserve emotional resources and energies, and to direct them against the problems really worth worrying about.



4. The menopausal patient.
The woman who sees change of life as the end of useful life requires support from both family and family physician. Whether the psychological impact of menopause is directly related to hormonal changes, or merely coincidental, is debatable, but estrogenic therapy is frequently inadequate. Mellaril is a useful aid for these patients and, alone, or in combination with reduced estrogen dosage, will help ease the menopausal misery.



5. The previously hospitalized psychiatric patient.
Such a patient may still require the type of medication he has been accustomed to, but because he is no longer in a controlled setting the acceptable level of adverse reactions must be lower. In such circumstances Mellaril is perhaps the drug of choice.



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Side Effects: Pseudoparkinsonism and other extrapyramidal disorders are infrequent; drowsiness, especially in high doses early in treatment, may occur; nocturnal confusion, dryness of the mouth, nasal stuffiness, headache, peripheral edema, lactation, galactorrhea, and inhibition of ejaculation are noted on occasion; photosensitivity and other allergic skin reactions may occur but are extremely rare.
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Dosage and Administration — In *women:* one 250-mg. oral tablet three times daily for ten days. A vaginal insert of 500 mg. is available for local therapy when desired. When used, one vaginal insert should be placed high in the vaginal vault each day for ten days; concurrently two oral tablets should be taken daily.
In *men* in whom trichomonads have been demonstrated: one 250-mg. oral tablet twice daily for ten days.

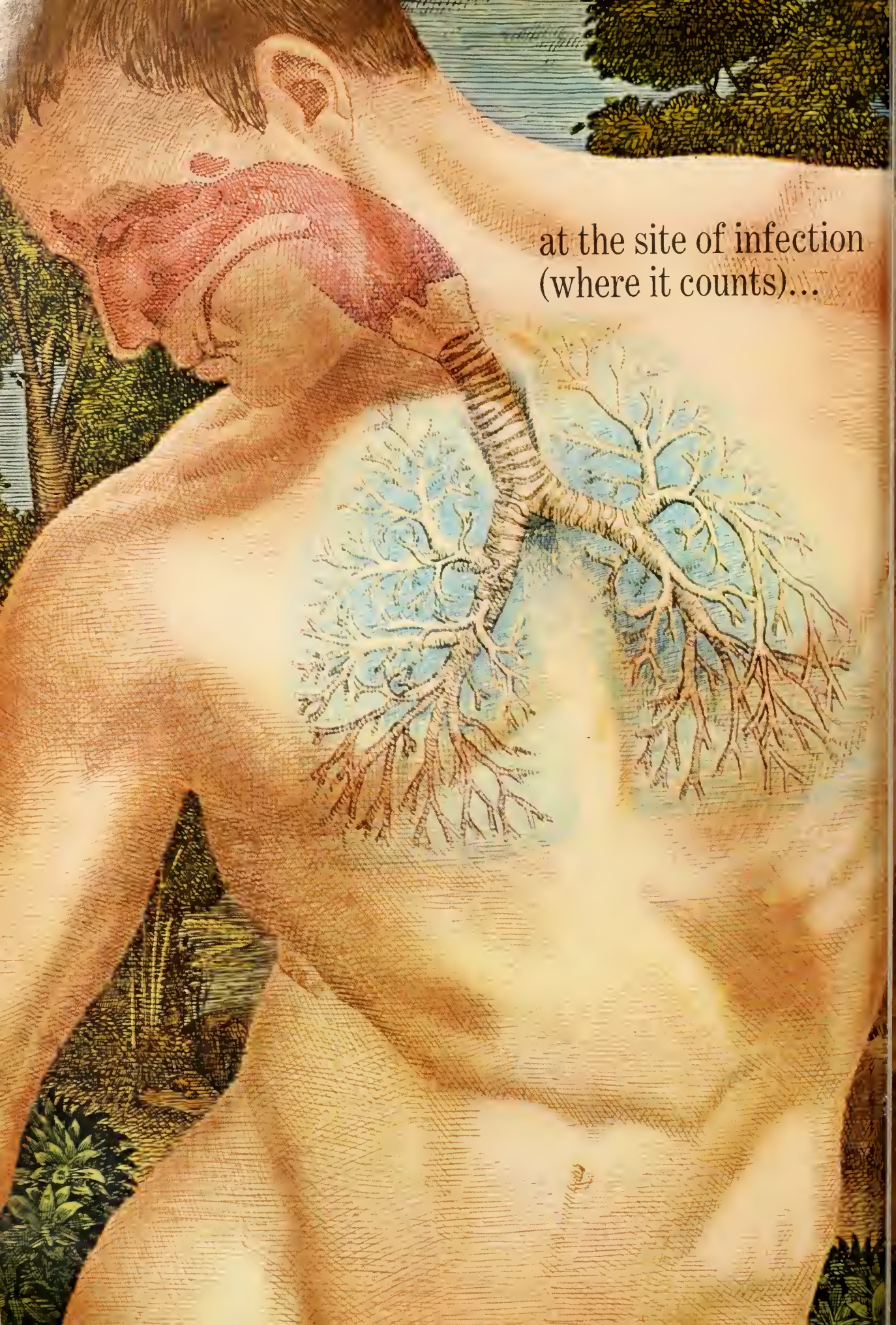
Contraindications — Pregnancy; disease of the central nervous system; evidence or history of blood dyscrasia.

Precaution—Complete blood cell counts should be made before, during and after therapy, especially if a second course is necessary.

Side Effects—Infrequent and minor side effects include nausea, metallic taste, furry tongue and headache. Other effects, all reported in an incidence of less than 1 per cent, are diarrhea, dizziness, vaginal dryness and burning, dry mouth, rash, urticaria, gastritis, drowsiness, insomnia, pruritus, sore tongue, darkened urine, anorexia, vomiting, epigastric distress, dysuria, depression, vertigo, incoordination, ataxia, abdominal cramping, constipation, stomatitis, numbness of an extremity, joint pains, confusion, irritability, weakness, flushing, cystitis, pelvic pressure, dyspareunia, fever, polyuria, incontinence, decreased libido, nasal congestion, proctitis and pyuria. Elimination of trichomonads may aggravate candidiasis.

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In the treatment of acute bacterial pharyngitis and tonsillitis, this antibiotic has promptly eradicated the bacteria (streptococci) and has produced a parallel prompt clinical improvement. There have been no group A beta-hemolytic streptococci resistant to this preparation. In beta-hemolytic streptococcus infections, treatment should be maintained for ten days to prevent the development of rheumatic fever or glomerulonephritis.

Erythromycin estolate has proved to be very effective in pneumococcus pneumonia and in acute bronchitis with pneumococci on culture. Bronchopneumonia and otitis media in children have responded well to its use.

The antibiotic has been used very successfully in staphylococcus infections. Good therapeutic results have been obtained in soft-tissue infections, abscesses, cellulitis, carbuncles, wound infections, and furunculosis.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents. As is the case with any treatment regimen used in these severe conditions, surgical procedures should be performed when indicated, and large dosages of the antimicrobial agents should be employed. In this fashion, Ilosone has been effective in staphylococcus pneumonia, osteomyelitis, septicemia, empyema, and meningitis.

Multiple 500-mg. doses of the drug have also been useful in gonorrhea and syphilis. Since penicillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with preexisting liver disease or dysfunction.

Adverse Reactions: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have developed in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly, usually within forty-eight hours, if the drug is readministered to sensitive patients. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a second time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small compared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extrahepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeared be definitely related to use of the drug, laboratory findings we characterized by increased direct-reacting bilirubin, elevat alkaline phosphatase levels, negative or weakly positive cephal flocculation and thymol turbidity tests, elevated serum glutam oxalacetic transaminase levels, peripheral eosinophilia, and nc mal cholecystograms.

Individual idiosyncrasy seems evident since jaundice has r been reported in other patients taking prolonged courses of t medication. Patients with chronic infection have been given 1 to 2 Gm. of the drug daily for periods of two to six months, a patients with rheumatic fever have taken prophylactic doses 0.5 Gm. daily for two years without difficulty. In one group 144 patients who received the drug daily for two years, no jau dice was noted. It was of interest that members of six of the patients' families, who were not taking the drug, had episod of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels we determined in a group of fifty-four adults and children who to 250 mg. of Ilosone daily for an average of sixteen months rheumatic fever prophylaxis. The results were compared wi those of a similar group of forty-four patients who received pe icillin. There were no cases of jaundice in either group. Elevati of SGPT and serum alkaline phosphatase levels during the cour of treatment was observed in one patient treated with Iloso and in two patients treated with penicillin. Seven other patier in the group receiving Ilosone and four others in the penicill group showed elevations in one of the tests at some time duri administration of the drugs.

Very satisfactory therapeutic results, without toxicity, we reported in 102 pediatric patients who received short-term (te day) courses of Ilosone in the treatment of streptococcus inf tions. Results of liver function tests in these patients we comparable to those in a similar control group who had receiv penicillin.

Gastro-intestinal disturbances not associated with hepatic fects are observed in a small proportion of individuals as a res of a local stimulating effect of the medication on the alimenta tract; however, the normal intestinal gram-negative bacter flora is not appreciably altered by erythromycin drugs.

Although allergic manifestations are uncommon with the u of erythromycin, there have been occasional reports of urticar skin eruptions, and, on rare occasions, anaphylaxis.

Administration and Dosage: Ilosone is administered orally.

Ilosone Pulvules®, Ilosone Liquid 125, Ilosone, 125, for O Suspension, Ilosone Drops, Ilosone Chewable Tablets.

For infants and for children under twenty-five pounds of bc weight, the usual dosage is 5 mg. per pound every six hours; children twenty-five to fifty pounds, 125 mg. every six hou (Tablets Ilosone Chewable should be chewed or crushed a swallowed with water.)

For adults and for children over fifty pounds, the usual dos of Ilosone is 250 mg. every six hours.

For severe infections, these dosages may be doubled.

When larger doses are indicated, parenteral erythromy therapy should be considered.

In the treatment of syphilis, the recommended total dosag 20 to 30 Gm. given in divided doses for a period of ten to fift days. Close follow-up of the patient is necessary since eryth mycin drugs have not had adequate evaluation in all stages syphilis. Examinations of spinal fluid are recommended as p of the follow-up therapy.

For gonorrhea, 500 mg. four times a day for four days recommended. In the treatment of gonorrhea, patients wit suspected lesion of syphilis should have a dark-field examinat before receiving antibiotics, and monthly serologic tests sho be made for a period of three months.

How Supplied: Pulvules Ilosone, Capsules, N.F., 125 and 250 (equivalent to base), in bottles of 24 and 100.

Ilosone Liquid 125, Oral Suspension, U.S.P., 125 mg. (equiva to base) per 5-cc. teaspoonful, in 60-cc. and pint-size packa

Ilosone, 125, for Oral Suspension, N.F., 125 mg. (equival to base) per 5-cc. teaspoonful, in 60 and 150-cc.-size packa

Ilosone Drops, 5 mg. (equivalent to base) per drop, in 10-cc.- packages, with dropper calibrated at 25 and 50 mg.

Tablets Ilosone Chewable, N.F., 125 mg. (equivalent to ba in bottles of 50. [032

References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:69, 2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:398, 3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198, 1960.

Additional information available to physicians upon request.
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Pre- and Postnatal Learning in Organisms: An Epigenetic Approach

VICTOR X. FONGEMIE, M.A.*

The adaptive potential of an organism in a particular environment is dependent upon two major variables: (1) the organism's heredity or genotype, and (2) the nature of the interaction between the changing organism and its environment. The latter is often referred to as the organism's "learning" or developmental history.

The extent to which an organism achieves a certain level of proficiency in controlling his environment is limited by the organism's genotype. Some scientists believe that limitations imposed by the genotype have a limited role in determining the behaviors of organisms. The extent to which an organism displays behavioral deficiencies or pathologies is thought to be the major product of a deprived learning or developmental history. Developmental history is the accumulation of learned habits and expectations by which the organism perceives and responds to stimuli in the environment.

The pathological adult or youngster can be understood as an organism of multiple learning and motivational deficiencies. Research in clinical psychology at our laboratory has shown this approach useful.[14,15,17] Pathologic behavior is best delineated on the basis of life-long behavioral deficiencies that are directly related to learning and cognitive variables. The degree of pathology appears to be related to the degree of learning deficiencies.[15]

Determination of the role of early learning from which the perceptual and cognitive systems of the organism develop, is not the concern of the above studies. Their intent is to show that developmental history variables are of the greatest importance for understanding contemporary behaviors of normal and pathological individuals. It is the purpose of this paper to present a mechanism whereby early experience may produce normal and pathologic behavior.

Animal and clinical research on the effects of early stimulation upon later and adult behavior has increased during the past ten years.[19] It has been discovered that the pre- and postnatal organism is much more capable of processing information than ever thought of,[3,4,6,8,10,11,12,16] and that abnormal stimulation does have serious everlasting consequences.[19] It is possible that early experience influences later behavior by (1) structuring an individual's perceptual or response capacities, and/or (2) repetition of an early experience over the developmental history of the individual which is enough to maintain an early learned response at a high level, but which is not enough to produce any effect in animals which have not had the early experience.

The proposition that an early experience is capable of changing an organism's cognitive and response potential has recently received experimental validation. The research was done in the area of *imprinting*.[1,2,19] Imprinting is a learning process that usually occurs shortly after birth. It is particularly evident in avians, but has also been demonstrated in mammals, including human neonates.[5,9,16,18] The behavioral form and temporal course of imprinting varies according to the species under study.

Imprinting in birds is seen as a following response, accompanied by low-level intensity vocalizations indicative of contentment, to a specific class of stimuli in the neonate's environment, i.e., its mother. Lorenz[19] first described the phenomenon. Ducklings began to follow him a few hours after hatching. When he moved away from them, they moved toward him, and followed him. The following behavior persisted over time. As adults, the ducks directed social and sexual responses to him and other adult humans, rather than to members of their own class. It appears that the first moving class of stimuli that the precocious avian neonate attends to in his environment will be the stimuli that will evoke later social and sexual responses.

Imprinting does not depend upon conventional reinforcers, i.e., food, drive-reduction, etc. It occurs rapidly, rapidity being dependent upon massive exposures to the imprinting stimulus, rather than upon distributed exposures. Imprinting behavior is highly stereotyped, well-defined, and a valuable tool (dependent variable) for the study of effects of early experience upon later behavior.

Dimond,[1] Paulson,[10,11] and Fongemie[2] found that by exposing avian fetuses to intense stimulation, (1) neonatal imprinting was significantly deterred or bypassed, (2) maturation of the visual apparatus was significantly accelerated, (3) the effects were related to fetal age, and (4) the behavior of the experimental chicks was similar to that of older imprinted chicks.

These studies support the general proposition that the expression of the genotype can take many forms (phenotypes). Furthermore, extensive physiological and behavioral variations of the phenotype can be directly produced by manipulating the environment of the developing organism. Of greatest importance, it appears that the younger the organism, the greater the effect. Development of a specific element of behavior appears to stimu-

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late *induction*, an embryological developmental phenomenon.[13]

Early in embryogensis, cells are capable of differentiating into different kinds of tissue, depending upon the *inductor* used. The *same* cells can develop into a variety of tissue. Once the cells have been determined by the inductor, they have limited competence for incorporating significant changes in stimulation. Rather, the determined tissue becomes the substrate for the effects of later stimulation.[7,13]

A similar effect is seen when the avian fetus is manipulated.[1,2] Imprinting potential is significantly altered by artificial stimulation. The neonate never imprints, and subsequent behavior remains different from controls. The untouched fetus imprints normally.

The writer is in the process of preparing a series of studies, in order to delineate operative mechanisms of the effects noted, and to determine the nature of the effects upon later behavior.

In summary, the writer has shown that by manipulating species – specific behavior potential early in life, profound effects on later behavior can be produced. Manipulation of fetal behavior has greater effect than manipulation of neonatal behavior. These results and others have shown that most of the variance in behavior is accountable by variance of stimulation in the environment. However, little is known about the processes underlying these effects, and the extent to which they determine a directive effect on adult and contemporary behavior of organisms. Finally, it is interesting to know that some behaviors can be determined by experimental manipulation as early as late fetal life.

REFERENCES

1. Dimond, S. J.: Imprinting: a phenomenon governed by embryonic visual experience. Unpublished manuscript, The University, Cardiff, Wales, 1966.
2. Fongemie, V. X.: Imprinting and visual discrimination in white rock chicks as affected by prenatal exposures to high, medium, and zero intensities of light. Unpublished manuscript, University of Maine, Orono, Maine, 1965.
3. Gottlieb, G.: Prenatal auditory sensitivity in chickens and ducks. Science, 147: 1596-98, 26 Mar. 65.
4. Gottlieb, G., and Kuo, Z.: Development of behavior in the duck embryo. J. Comp. Physiol., 59: 183-88, April, 1965.
5. Gray, P. H.: Theory and evidence of imprinting in human infants. J. Psychol., 45: 155-166, 1958.
6. Hamburger, V.: Some aspects of the embryology of behavior. Quart. Rev. Biol., 38: 342-65, Dec. 1963.
7. Jerne, N. K.: Antibody formation and immunological memory. In J. Gaito (Ed.), Macromolecules and Behavior, New York: Appleton-Century-Crofts, 151-57, 1966.
8. Kuo, F. Y.: Ontogeny of embryonic behavior in aves: I. The chronology and general nature of the behavior of the chick embryo. J. Exp. Zool., 61: 395-430, 1932.
9. Marr, J. N.: Varying stimulation and imprinting in dogs. J. Gen. Psychol., 104: 351-364, 1964.
10. Paulson, G. W.: Maturation of evoked responses in the duckling. Exp. Neurol., 11: 324-333, March 1965.
11. Paulson, G. W.: Some electophysiological aspects of early development of the nervous system. Develop. Med. Child. Neurol., 68: 41-49, 1965.
12. Peters, J. J., Vonderhae, A. R., and Powers, T. H.: Electrical Studies of functional development of the eye and optic lobes in the chick embryo. J. Exp. Zool., 139: 459-68, 1958.
13. Pribram, H.: Some dimensions of remembering: steps toward a neuropsychological model of memory. In J. Gaito (Ed.) Macromolecules and behavior, New York: Appleton-Century-Crofts, 165-187, 1966.
14. Rothstein, C.: A Psychosocial personality model and its application to a psychiatric treatment program. J. Me. Med. Assoc. 54: 149-53, July, 1963.
15. Rothstein, C.: A Psychosocial model of psychopathology, J. Me. Med. Assoc., July, 1967.
16. Salk, L.: Mother's heartbeat as an imprinting stimulus. Trans. N.Y. Acad. Sci., 24: 753-63, May 1962.
17. Schwartz, S.: Cognitive deficit among remitted schizophrenics: The role of a life-history variable. J. Abnorm. Psychol. 72: 54-58, 1967.
18. Shipley, W. I.: The demonstration in the domestic guinea pig of a process resembling classical imprinting. Anim. Behav. 11: 470-74, 1963.
19. Sluckin, W.: Imprinting and early learning. London: Methuen, 1964.

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A Psychosocial Model of Psychopathology

CHARLES ROTHSTEIN, Ph.D.*

To be presented here is a brief over-view of a psychosocial need model of personality. This model is offered as one mode of conceptualizing those factors presumed to underlie the development of symptoms grouped under the general heading of mental or emotional disorders. Its basic postulates deal with human needs; the affective consequences of need threat of frustration, e.g., anxiety and depression; the role or psychological or social symptoms as functional defenses aimed at attenuating painful affects engendered by need threat or frustration; the relation of psychotic and psychophysiological reactions to uncompensated painful affects; the relation of learning deficiencies to psychopathology. Several previous articles by the author relative to psychiatric treatment programs and specificity versus non-specificity controversies have incorporated aspects of this personality model.[16,17,18,19,20,21]

This model is conceived of as a dynamic, holistic, purposive, rational need model of personality. Need, a ubiquitous construct in personality theory, has been defined by Murray as "a construct which stands for a force – a force which organizes perception, apperception, intellection, cognition, and action in such a way as to transform in a certain direction an existing unsatisfying situation."[15] Need is a construct which subsumes both the drive and goal elements of behavior. A corollary to the above definition is that painful affects attend need threat or frustration, whereas pleasant affects attend need satisfaction. With only minor changes, this definition could apply to many of the other dynamic constructs employed by personality theorists, for example, Allport's traits;[2] Cattell's ergs and metaergs;[4] Freud's instincts;[7] McDougal's sentiments;[13] Dollard and Miller's drives;[5] Adler's urges.[1] The question, however, of what constitutes man's most basic needs, drives, or urges is a speculative one. Theorists such as Freud, McDougal, Dollard and Miller, Murphy,[14] and Murray, assume only physiological or visceral needs to be basic, psychosocial needs being accorded derived or secondary status. However, the difficulty in explaining the persistence of secondary needs or drives in the face of apparent lack of reinforcement from the primary drives, led, in part, to Woodworth's dictum of mechanisms becoming drives;[26] Allport's concept of functional autonomy;[2] Tolman's suggestion that means objects may become ends;[25] and Stern's assertion that phenomotives may become genomotives.[22] (Murphy has speculated upon the possibility that commonly accepted psychosocial needs such as sensory and activity needs may have their locus in sense organs and muscles.) Maslow, in dealing with the nature of basic needs, has posited an instinctoid quality to certain psychosocial needs although he subordinates these needs to physiological and safety needs in a need hierarchy.[11] Theorists such as Fromm,[6] Adler, May,[12] Horney,[9] and Sullivan[23] assume certain psychosocial needs to be as basic to the human condition as physical needs and as prepotent. Some writers, for example – Goldstein,[8] Angyal,[1] Lecky,[10] Adler, and Tillich,[24] subordinate even the physiological needs to a general overall sovereign psychological need respectively labeled self-actualization, self-expansion, self-consistency, self-realization, and "the need to be."

In the personality model presented below a class of goal-directed behavior is accorded basic need status when it meets the following criteria:

1. It is found universally notwithstanding culturally determined differences in the instrumental acts employed in moving toward the goal.
2. Painful affects attend perceived threats to realization of the goal; pleasant affects, perceived realization of the goal.
3. Reduction or generalization of the observed behavior to another level of discourse reduces the probability of predicting future behavior.

POSTULATES OF THE PERSONALITY MODEL

Postulate 1 – Man's existence as a unique social being in time provides him with three major need systems:

1. Physiological and safety needs (needs relative to maintaining the physical integrity of the organism).
2. Esteem needs (needs relative to being positively valued by significant others).
3. Effectance needs (needs relative to engaging in goal-directed activities that will lead to a progressive sense of effectiveness in one's personal, social, and natural worlds).

Postulate 2 – Anxiety or anxiety-equivalents are responses occasioned by any perceived threat to satisfaction of a need. Depression or depression-equivalents are responses occasioned by any perceived failure to have satisfied a need. The needs and the affective reactions to their threat and frustration are given by the human condition. Current behavior, painful affects, and symptoms are a function of current attempts to meet needs, failures, and restitutive devices, respectively.

Postulate 3 – Esteem and effectance needs may be gratified: 1) autonomously; 2) vicariously (through identification with others); 3) supportively (with the help of others). Physiological and safety needs may be gratified autonomously or supportively.

Supportive relationships may be classed as:

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1. Identification relationships – relationships in which support is given owing to the perception of the other as an extension of oneself; i.e., satisfaction of the needs of the other is vicariously experienced as satisfaction of one's own needs.
2. Reciprocal relationships – relationships in which one supports another owing to the expectation of receiving support from the other.
3. Effectance relationships – relationships in which one supports another owing to a desire to enhance his effectance needs through shaping the other.
4. Esteem relationships – relationships in which one figure supports another owing to his desire to be esteemed for playing a supportive role.

Postulate 4 – The probability of gratifying human needs is proportional to man's learning to: 1) recognize the nature of his needs and the affective responses attending their threat and satisfaction; 2) differentiate between real and magical threats to physical integrity and appropriate and inappropriate methods for countering real threats; 3) recognize the esteem criteria of his present significant figures; 4) structure effectance goals in his area of greatest potential, aspire realistically in these areas, recognize the steps necessary for successful realization of these goals and the appropriate validating sources; 5) recognize the modes of need gratification; 6) recognize the motivations behind supportive relationships and the role requirements of such relationships; 7) meet each need in the context of the other needs.

Postulate 5 – Painful affects experienced as a consequence of need threat or frustration will lead to one or combinations of the following responses:

1. New learning that increases the probability of realistic need satisfaction.
2. The utilization of defense mechanisms whose aim is to deny needs, e.g., repression, dissociation, denial, or to meet needs magically, e.g., delusions, hallucinations, ritualistic behavior.
3. Attempts to reduce painful affects chemically, e.g., chemotherapeutic agents, alcohol, narcotics.
4. Acting-out behavior aimed at forcing the environment to satisfy needs.
5. Moving toward individuals or institutions who will assume the major responsibility for need satisfaction, e.g., passive dependent or passive aggressive behavior.

Unrelieved painful affects will lead, over time, to physiological breakdowns, e.g., psychophysiological reactions, psychotic disorganization.

Inasmuch as we have assumed that these needs are given by the human condition, that painful affects inevitably attend their thwarting, and that certain knowledge is essential for need satisfaction, then the major focus for the study of psychopathology, i.e., the study of painful affects, defenses aimed at their binding, or the physiological sequelae to uncompensated painful affects, turns to a learning model of man. In essence, we are positing that the incidence of psychopathology will be significantly and positively correlated with learning deficiencies in those areas outlined in Postulate 4 above regardless of those historical conditions which impeded appropriate learning in these areas. In other words, we are postulating that psychopathology has its roots in the individual's failure to have learned how to meet his basic human needs. Although the symptoms seen subsequent to this failure may cover the entire nosological spectrum, we are assuming that the basic underlying core of mental disorders will turn out to be learning failures relative to need satisfaction.

If the previous suppositions are correct, then the focus of treatment would turn toward the identification of *those* areas in which learning deficiencies are present and the correction of such deficiencies. This does not mean that treatment of the behavioral, physiological, or biochemical symptoms exacerbated by painful affects is not appropriate. It means that these treatments be recognized as the alleviation of the end results of the core disorder, rather than as treatment of the basic source of disturbance. For example, chemotherapeutic agents are valuable for attenuating those symptoms presumed to be produced by the physiological or biochemical disorders attending uncompensated painful affects. However, it is important to realize that these ataractic agents deal only with the final common pathway of stress and do not touch the basic personality disorder which presumably increases the probability that stress will be experienced.

In an attempt to test hypotheses derived from this psychosocial need model of personality a series of studies have been conducted over the past six years, which studies will be reported shortly in more detail. These studies attempt to demonstrate that significant positive correlations exist between the incidence of psychopathology and the magnitude of learning deficiencies in the areas of awareness of how to meet needs. In order to conduct these studies it was necessary to devise both learning deficiency scales and an objective measure of the incidence of psychopathology. The measure of psychopathology was developed in the form of longitudinal measures of social, physical, and psychological adjustment. The learning deficiency scales were developed in the form of questionnaires relative to the patient's fund of knowledge, or lack of it, in those areas outlined in Postulate 4 above. To date we have found significant positive correlations between the incidence of psychopathology and the magnitude of learning deficiencies in certain areas. These learning deficiencies seem to be uncorrelated with the more classical measures of intelligence. These scales are now being submitted to more intensive statistical analysis to better identify the most important areas of learning deficit and those general factors which may underlie these deficiencies.

Should these correlations hold up upon cross-validation, we will have taken one important step in identifying those basic factors presumed to underlie psychopa-

thology regardless of its specific manifest form. The implications for this type of theorizing are fairly clear. Should the basic substrata of psychopathology turn out to be learning deficiencies in certain areas of life, then the diagnostic and treatment focus will turn toward identifying and remedying these learning deficiencies regardless of the particular symptoms which are the more superficial aspects of the total problem. Thus, for example, schizophrenic disturbances, alcohol problems, neurotic problems, character disorders or psychophysiological reactions would be analyzed in terms of the basic learning deficiencies underlying the individual's inability to satisfy human needs, with the core treatment being the correction of these learning deficiencies by those means most appropriate to such correction. Once again it seems essential to state that this theory does not invalidate the use of treatment aimed at attenuating the end symptoms of need frustration. It merely states that such treatment be recognized as symptomatic in that it does not deal with the core problem, which in this model is presumed to be learning deficiencies relative to meeting human needs. Too, this does not mean that identification or correction of learning deficiencies is an easy matter. On the contrary, our experiences have shown that the changing of erroneous beliefs, attitudes and expectations, i.e., the rectifying of learning deficiencies, is an arduous task which requires infinite patience and a firm and judicious use of reward and punishment systems in an attempt to selectively reinforce responses conducive to meeting needs, while selectively extinguishing responses inimical to need satisfaction. Indeed, the use of symptomatic treatment in dealing with these disorders is a much easier treatment method which requires relatively little involvement with the patient. The only difficulty with symptomatic treatment is that it does nothing to touch the basic disorder which underlies the symptoms, and may be likened to putting bandaids on boils – a superficial glossing over of more basic problems.

In summary, we have conceptualized mental disorders as learning deficiencies relative to meeting basic needs. We have pointed out that traditional nosological description merely serves to class those symptoms which have been used to attenuate the painful affects resulting from need frustration or those symptoms which are the physiological sequelae to uncompensated painful affects that attend need frustration. We have also stated that basic identification and treatment of mental disorders revolves around understanding and remedying these learning deficiencies – a difficult task which requires infinitely more involvement with the patient than is true of symptomatic treatment, notwithstanding the value attendant upon judicious mitigation of symptoms.* In other words, we are proposing a psychosocial model of mental disorder that views symptoms as a superficial surface phenomena of a disorder that has as its roots the individual's failure to have learned how to deal with those needs that are given by the human condition.

*By judicious mitigation of symptoms, we refer to relieving noxious symptoms sufficiently to reduce disorganizing behavior while leaving sufficient discomfort (anxiety) to help motivate the individual to approach new learning experiences.

References

1. Adler, A.: Social Interest: A Challenge to Mankind. (Tr. by J. Linton and R. Vaughan) London: Faber, 1938.
2. Allport, G. W.: Personality: A Psychological Interpretation. New York: Holt, 1937.
3. Angyal, A.: Foundations for a Science of Personality. New York: Commonwealth Fund, 1941.
4. Cattell, R. B.: Personality: A Systematic Theoretical and Factual Study. New York: McGraw-Hill, 1950.
5. Dollard, J. & Miller, N. E.: Personality and Psychotherapy. New York: McGraw-Hill, 1950.
6. Fromm, E.: Escape from Freedom. New York: Holt, 1941.
7. Freud, S.: The Standard Edition of the Complete Psychological Work of Sigmund Freud. London: Hogarth Press and The Institute of Psycho-Analysis, 1962.
8. Goldstein, K.: The Organism. New York: American Book, 1939.
9. Horney, Karen: Neurosis and Human Growth. New York: Norton, 1950.
10. Lecky, P.: Self-Consistency: A Theory of Personality. New York: The Island Press, 1945.
11. Maslow, A. H.: Motivation and Personality. New York: Harper & Row, 1954.
12. May, R., Angel, E., and Ellenberger, H. F.: (Eds.) Existence, New York: Basic Books, 1958.
13. McDougal, W.: Outline of Abnormal Psychology. London: Methuen, 1926.
14. Murphy, G.: Personality: A Biosocial Approach to Origins and Structure. New York: Harper & Row, 1947.
15. Murray, H. A., et al.: Explorations in Personality. New York: Oxford University Press, 1938.
16. Rothstein, C. and Cohen, I.: Hostility and Dependency Conflicts in Peptic Ulcer Patients. Psychol. Rep., 4: 555-558, 1958.
17. Rothstein, C.: A Psychiatric Continued Treatment Ward Program. The Psychiatric Quart., 36: 693-703, October, 1962.
18. Rothstein, C.: A Psychosocial Personality Model. J. Maine Med. Assoc., 54: 149-153, July, 1963.
19. Rothstein, C.: A Comparative Evaluation of an Alcoholic and a Non-Alcoholic Psychiatric Population. J. Maine Med. Assoc. 55: 128-130, July, 1964.
20. Rothstein, C.: A Four-Year Follow-Up of a Non-Traditional Program for Chronic Psychiatric Patients. J. Nerv. Ment. Dis., 142: 355-368, April, 1966.
21. Rothstein, C.: Non-Specificity versus Specificity in Alcoholism. The Journal Maine Med. Assoc. 57: 129-132, July, 1966.
22. Stern, W.: General Psychology from the Personalistic Standpoint. New York: Macmillan, 1938.
23. Sullivan, H. S.: Conceptions of Modern Psychiatry. (2nd ed.) New York: Norton, 1953.
24. Tillich, P.: The Courage to Be. New Haven: Yale University Press, 1952.
25. Tolman, E. C.: Purposive Behavior in Animals and Men. New York: Appleton-Century-Crofts, 1932.
26. Woodworth, R. S.: Experimental Psychology, New York: Holt, 1938.

President's Address*

GEORGE E. SULLIVAN, M.D.

It has been the custom for the president of the Maine Medical Association to deliver a message at the annual meeting. This is in keeping with that tradition.

You are all aware that these are times of change for American medicine. A bold new awareness of medical needs, and a new definition of each individual's right to good health care have focused attention on the inadequacies of the American system of medical care and the critical shortage of professional medical personnel. We have so far failed to successfully solve these, and other problems within our own ranks. The recent attempts of the federal government have removed some of these burdens. Our legislative record nationally must be termed very poor. In 1933 organized medicine opposed Blue Cross. Later, doctors came out against the concept of group practice. We all opposed Social Security. We were anti-compulsory health insurance. In the late 1930's and, more recently, we spent millions opposing Medicare, only to end up proposing Eldercare, a similar program which came too late with too little to offer.

Harry Truman mentioned old age medical insurance back in the 1930's and others took up the cry in more recent years. What did we do? We hired Whittaker & Baxter to the tune of several millions of dollars. They burned the idea into the minds of millions of voters who had never heard of government medical care before. Then again, when Medicare was first proposed we violated the most elementary rule of politics also with the aid of Whittaker & Baxter. That rule: never overact, otherwise you give credence and publicity to the position of your opponent. Right now, we are being encouraged to adopt a policy of direct billing under Medicare. Can it be that, once again, we are anti in our approach? Why not leave the billing of the patient to the prerogative of the individual physician. To bill a patient without means directly will be interpreted by many as an indignity imposed on the individual and thus defeat the alleged purpose of Medicare; that purpose being that every American is entitled to good medical care.

It has been projected by some that shortly everyone over 60 and under 20 will be entitled to free medical care. It has been projected by others that, within ten years, we will have completely socialized medicine. Which of these predictions – if either – will prove correct remains to be seen. I have no such prediction to make but I will state this: unless we become more positive and less negative in our philosophy and in our approach, then, as sure as night follows day, we will have more federal direction and participation than we have now. This is inevitable for we all know that the great society intends for every American to have good medical care as a basic right. It seems to me that we in medicine have a job to do, that of "shoring up" and preserving the practice of medicine, if not for ourselves, at least for the generations of physicians to come.

I believe that this can best be done by members of the profession being both willing and eager to devote a measure of time to matters other than the direct treatment of patients. We must become more involved. We must give direction to new programs and raise a voice in the application of new ideas.

If our claim is just – that we should be the sole judges of what adequate and proper medical care is, then we must all be willing to serve on the numerous committees that currently are formulating plans and producing definitions of what adequate and proper medical care is and should be. We must – and I mention this advisedly and cautiously, be willing to sit on committees which judge what is or is not good medical practice.

As physicians, we must be cognizant of the fact that preventive medicine entails a good deal more than giving shots to children. Preventive medicine also means being involved in health education for children, the training of community rescue squads and first aid station personnel, involvement in home health service programs and the training of personnel for this program, a willingness to talk with senior citizens' groups and other citizens' groups regarding medical care in order to remove some of the aura of mystery and fear from the subject of medicine. We must become more actively involved in programs of accident prevention on the highways and in the factories; be actively involved in postgraduate medical education. We must take a greater interest in the recruitment and training of medical and paramedical manpower and the many other facets of preventive medicine too numerous to mention of which you are all aware. In order to do these things, we need to become more actively interested in the problems of our community and our health departments, both state and local. Some communities have trouble finding an M.D. to be their physician and you all know how difficult it is to find a Medical Examiner for the county.

Our objectives and those of the State Health Department are identical — we are both looking for better health for all. Our differences have been in the matter of methods, and usually these methods entail financing and this difference, to a degree, has been minimized by recent federal legislation. The lines of communication between the Department of Health and the physician must be kept open, regardless of Medicare, Fedicare or any system of administration so that the practicing physician remains the core of our present health care structure. We

Continued on page 166

*Presented at the 1967 Annual Session of the M.M.A. House of Delegates.

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State Of Maine
Department of Health and Welfare

Maine's Experience With a State-Operated Personnel Monitoring Program for Radiation Workers

J. W. FULLER*

In a 10-year program of monitoring exposures of radiation workers, Maine's Department of Health and Welfare found increasing acceptance of its free film badge services. Results of findings are outlined. Review of film badge exposure records during examination of over 5,000 film badges in 1965 indicated that exposure of the great majority of individuals was relatively low. Periodic radiological health surveys of installations using independent film badge services indicated that no exposures to individual workers exceeded 100 milliroentgens per week.

Maine's Department of Health and Welfare has operated a statewide film badge program for personnel monitoring of radiation workers since 1956. Although the State of Illinois in recent years has had a central file on radiation exposures among radiation workers, and some States have provided film badges on a limited scale during certain phases of their radiological health programs, Maine is the only State, so far as is known, that provides the film badges as well as a central file of the exposure findings on a continuing basis.[1]

Maine, whose current population is approximately one million, initiated this program for the following reasons:

1. Only one hospital and one industrial firm utilized personnel monitoring for radiation workers in 1954.

2. Preliminary surveys had revealed several examples of inadequate shielding and poor operating procedures among radiation users in the State.

3. Some dentists and veterinarians showed evidence of radiation injuries. It was felt that many other radiation personnel may have been overexposed to radiation as well, although signs of injury were not overt.

4. It was believed that a film badge service would provide a record of radiation exposures which would be useful in workmen's compensation cases where claims of radiation injury might be contested.

5. It was believed that a film badge service would develop an awareness of the potential hazards of radiation, would promote interest in radiation protection for both X-ray personnel and patients, and would make the introduction of State rules and regulations pertaining to radiation a much easier step.

As the availability of this service became known, the use of the State's film badges by various radiation installations in Maine gradually increased from a total of 2,280 film badges per year in 1956 to 5,086 in 1965. During fiscal year 1965, 580 individuals representing about 75% of the workers in Maine occupationally exposed to ionizing radiation (other than dentists, dental assistants, and dental hygienists), took advantage of the State's film badge program. Of these 580 people, 100 were part-time users and 409 were full-time users who wore the badges either for 2- or 4-week periods, depending on their workload, and 171 were doctors or dentists who wore the film badges for short periods to evaluate the radiation hazard in their offices.

In recent months, the system has included 405 physicians (M. D.'s and osteopaths), x-ray technicians and nurses employed in radiation work in hospitals; 16 dentists, dental assistants, and dental hygienists; 18 physicians and technicians using x-ray equipment in clinics and offices; a few other x-ray workers; and 141 isotope users. About 24% of the workers monitored in the program use radioactive materials licensed by the U. S. Atomic Energy Commission.

Stainless-steel film badge holders were purchased initially for use for this program. They were soon found to be unsuitable by nurses and female x-ray technicians because of their weight and bulk. Plastic film badge holders

*Chief of the Occupational and Radiological Health Sections, Division of Sanitary Engineering.

[1]Additional information about the State's film badge program, or other aspects of the radiological health program, is available by writing to the Department of Health and Welfare, Division of Sanitary Engineering, State House, Augusta, Maine 04330.

TABLE 1

AVERAGE FILM BADGE READING PER PERSON

Year	*Number of users*	*Average reading* (mR/month)*
1956-1957	131	18
1957-1958	145	35
1958-1959	158	19
1959-1960	167	50
1960-1961	200	33
1961-1962	230	9
1962-1963	241	10
1963-1964	258	21
1964-1965	306	20

* Sensitivity is approximately 1 mR.

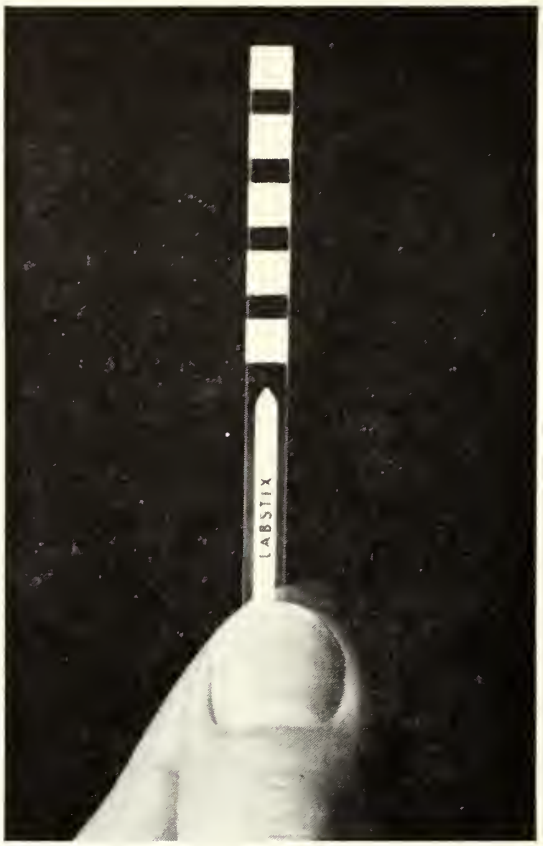
were subsequently purchased and used in the non-industrial radiation settings. However, the stainless-steel film badge holders are still used by the workers in industrial radiation installations. Each batch of 2,000 films purchased three times a year is calibrated by using as NBS certified radium needle for gamma radiation, a slug of natural uranium for beta radiation, and an x-ray machine with 2.5 mm of aluminum operated at 75 kVp for x-ray, as the majority of our film badge users are operating their equipment in the 75 kVp range.

Ordinarily the film badges are worn for periods of 2 weeks by groups with heavy workloads, and monthly by all others. The State pays postage for the film badges sent to the users and the users pay postage for the exposed film badges returned to the State. When the film badges have been processed, the Department of Health and Welfare institutes a follow-up of any unusual exposure.

A copy of the report is returned to the users; however, the original report of the badge reading and the film badge itself are maintained in permanent files in the Department of Health and Welfare. It was observed that there was insignificant fading of the image on the majority of the film badges over the 10-year period. Table 1 gives the average occupational radiation exposures for each year calculated for the monitored radiation personnel, assuming that all such persons have worn their badges 6 months or more each year of the exposure period.

It should be taken into consideration that the workload of most hospitals has increased in the last few years; therefore, the reduction in exposure rate received was not as clearly shown by Table 1 as if the workload had been constant. Where individual hospitals replaced their old buildings and installed properly shielded x-ray equipment, the reduction was greater.

Somewhat higher exposures have occurred among x-ray personnel employed in some of the large, old hospitals in the State. It is felt that these slightly higher exposures are due to the relatively heavy x-ray workloads that have been imposed on obsolescent equipment and facilities, and that the situation will be improved as mod-



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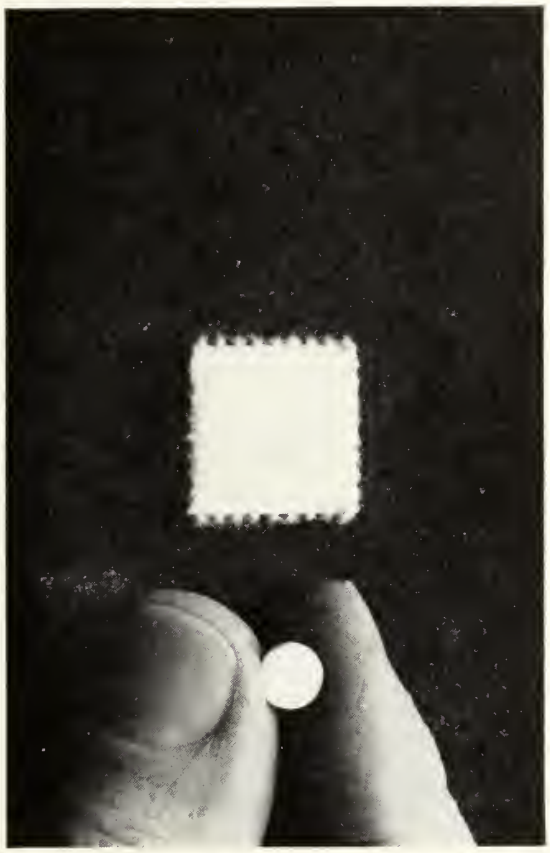
*Blood; ketones; glucose; protein, and pH.

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TABLE 2

DISTRIBUTION OF BADGE READINGS FOR FISCAL YEAR 1965

mR/week	*Number of Film Badges*
<2	3,127
2- 24	1,688
25- 49	161
50- 74	41
75- 99	24
100-199	23
200-299	16
300-399	1
400-499	2
500-599	2
>2,000	1
Total	5,086

ern hospitals are built to replace the old ones. Generally smaller radiation exposures have been found among dentists, dental assistants, and dental hygienists; industrial radiographers doing cabinet radiography; hospital and research laboratory workers using AEC-licensed nuclides; and x-ray personnel employed in small hospitals where the x-ray workload has been light.

Under the State-operated program, 5,086 badges were processed during fiscal year 1965, 34 of which gave indications of greater than 100 mR/week, the short-term limit on radiation exposure used for program purposes. No individual, however, had an indicated exposure in excess of 5 R for the year. Table 2 shows the distribution of badge readings. Followup of the indicated overexposure cases usually revealed that good practices had been breached, such as a technician holding a subject during radiography. In some cases, there were reasons to believe the film badge had been carelessly exposed by leaving it, improperly, near a radiation source.

A relatively small number of radiation installations in Maine utilize film badge services other than the service available from the State. These installations are not required to report the film badge findings. However, each user must maintain records of the findings of his film badge program, and these records are reviewed by State personnel during periodic radiological health surveys. No instance of exposures of more than 100 mR/week to ionizing radiation has come to light through this record system.

There are many individual users of x-ray equipment in Maine who are not monitored on a regular basis for radiation exposures. These include about 610 dentists and dental technicians, about 325 individuals (physicians, technicians, and others), such as those working in 25 small hospitals and private medical offices where x-rays are used only occasionally, and 82 persons who work around thickness gauges in which AEC-controlled nuclides are used. Over the 10-year period, 69 dentists and

Continued on Page 166

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County Society Notes

ANDROSCOGGIN

The meeting of the Androscoggin County Medical Association was held at St. Mary's General Hospital in Lewiston, Maine on April 20, 1967. The meeting was called to order by the President, Daniel R. Shields, M.D. with twenty-one members present.

Thomas F. Shields, M.D. proposed that the Society adopt a standard insurance form for physicians' claims. It was suggested that the Secretary of the Society investigate the possibilities of utilizing the National Health Insurance claim form.

A brief report on the Interim Meeting of the Maine Medical Association was given by Joseph J. Rando, M.D. The speakers of the evening were Mr. Oscar Webb of Boothbay and Mr. George Pierce of the Depositors Trust Company. Mr. Webb outlined the liberalized features of the Keough Bill (HR 10), and the tax advantages it offered to physicians. Mr. Pierce outlined the functions of the bank as trustee. He strongly urged all physicians to take advantage of the tax benefits or (HR 10). A question and answer period followed.

JOSEPH J. RANDO, M.D., *Secretary pro tem*

WASHINGTON

The Washington County Medical Society held regular monthly meetings on April 24 and May 29, 1967 at the Dennys River Inn in Dennysville, Maine.

There was considerable discussion on the Maternal and Infant Care Program.

Dentists were present at the May 29 meeting and it is planned to invite dentists to the next meeting on June 26. Dentists are making more use of the local hospitals and we hope to iron out some joint problems.

KARL V. LARSON, M.D., *Secretary*

HANCOCK

A meeting of the Hancock County Medical Society was held at the Brookside Restaurant in Ellsworth, Maine on May 10, 1967. Guests present were Dr. H. Curtis Wood, former President of the Association of Voluntary Sterilization and speaker of the evening and John H. Shaw, M.D. of Winter Harbor, Maine.

Several notices of meetings of the American Medical Association and Extended Care Facilities meetings were announced. The resolution relative to the Maternal and Infant Care Program was discussed and revised for presentation to the Maine Medical Association House of Delegates on June 11. A proposed resolution pertaining to the standards of care for school children and preschool children was temporarily tabled without objection until the September meeting. A proposal that the Society should go on record as opposed to all Federal subsidies of all types of medical care was presented but this was not discussed in any depth.

It was voted that Robert F. Russell, M.D. of Penobscot be nominated as Councilor for the Fifth District at the annual meeting of the Maine Medical Association House of Delegates.

Dr. H. Curtis Wood spoke to the Society on the problems and concepts of voluntary sterilization, the pitfalls that doctors and hospital administrations encounter, and suggestions as to how these problems and difficulties can be better handled so that voluntary sterilization may be made readily available to any couple that desires it. A brief question and answer period followed Dr. Wood's presentation.

RUSSELL G. WILLIAMSON, M.D., *Secretary*

LINCOLN-SAGADAHOC

The Lincoln-Sagadahoc County Medical Society met at The

AMERICAN CANCER SOCIETY - MAINE DIVISION, INC.

Brunswick, Maine

Normal to Malignant With DNA

PHILADELPHIA, PA. — Scientists at the Institute for Cancer Research have traced the major chemical changes incurred as a normal liver cell becomes malignant.

They have found that the cell genes undergo a sort of supercharged chemical evasive action, possibly in a desperate effort to detoxify cancer-causing compounds.

This was reported recently by the American Cancer Society in an account of research by Dr. Jakob A. Stekol, Head of the Department of Physiological Chemistry and Nutrition. Associated with Dr. Stekol in various phases of the research were Drs. Takeshi Utsonomiya and Stefan Bulba.

The scientists worked with rats. They fed the rats ethionine, which is a chemical very closely resembling methionine, one of the 20 natural building blocks of protein. When the rats eat enough ethionine, cancers develop in their livers and kill them.

By removing the rat livers at intervals during the course of their ethionine diet, the scientists analyzed the chemicals present. By charting the changes against time, they were able to map the chemical course to cancer.

DNA was dramatically changed on the course to cancer. Genes are composed, essentially, of DNA (or deoxyribonucleic acid). When a cell prepares to divide, the DNA reproduces in order to provide a new set of genes for the new cell. The DNA also manufactures RNA, which becomes the cell's protein factory. DNA, by making RNA, which in turn makes protein enzymes catalyzing thousands of cell chemical reactions, thus controls the inheritable chemistry of the cell and of the individual.

With ethionine feeding, the cell undergoes a series of major chemical changes. The most prominent and permanent change takes place in the genes; the DNA alternately breaks down and re-forms. It almost seems as though the genes were forming and re-forming in an effort to produce a new kind of RNA, which would produce new kinds of protein enzymes.

The DNA, in these desperate circumstances, enters a contorted chemistry, or series of mutations, from which it can not recover. The ethionine sticks in a DNA ethyl group of S-adenosyl-ethionine and gums up the whole DNA molecule. The gummed-up DNA can not make new RNA, so the cell's production of RNA falls off sharply, and protein synthesis too is slowed. The cancer cell has stepped-up DNA activity, and slowed RNA and protein activity.

Ethionine, which has been used for a couple of decades in cancer research, has been considered an artificial compound. The Stekol group found that it exists in nature, probably including man. They and others discovered it is synthesized by bacteria infesting the human colon. The ethionine could go through the colon wall and into the bloodstream.

American Cancer Society News Service Release



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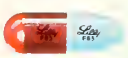
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Precautions: Tuinal should be used cautiously in patients with decreased liver function, since prolongation of effect may occur.

Adverse Reactions: Idiosyncrasy, such as excitement, hangover, or pain, may appear. Hypersensitivity reactions occur in some patients, especially in those with asthma, urticaria, or angioneurotic edema.

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Considerable progress has been made . . . in the understanding of thromboembolic disease and also in the ability to diagnose acute pulmonary embolism. . . . These advances are paralleled by a . . . broader appreciation of the common occurrence of pulmonary embolism. Greater attention is presently being directed toward the frequent occurrence of chronic embolization and its sequelae, chronic hypertension and cor pulmonale.

Although acute pulmonary embolism has become well known as a common disease, recurrent pulmonary embolism and embolic chronic pulmonary hypertension are also being recognized as frequent occurrences. Recurrent episodes . . . are not quite so silent if one learns to interpret correctly pulmonary events accompanied by chest pain, dyspnea and hemoptysis, if the significance of episodically increasing exertional dyspnea in the absence of congestive heart failure is understood and if more attention is paid to small pleural effusions and radiologically, fleeting infarcts are not misinterpreted as pneumonias.

Thrombophlebitis occurs often after injuries to the lower extremities, . . . after childbirth or forced bed rest for any cause, even in young, otherwise healthy persons, and this may be the onset of thromboembolic disease with fatal pulmonary hypertension years later.

. . . In chronic embolic pulmonary hypertension and cor pulmonale . . . the diagnosis can usually be made . . . by history, clinical examination and plain films.

Submitted by Jacob B. Dana, M.D., Maine Heart Association.

Reference — Fleischner, F. G., New England Journal of Medicine, Volume 276, Pages 1213-1220, 1967.

Ledges in Wiscasset, Maine on May 16, 1967. The meeting was called to order by the President, Charles E. Burden, M.D.

The guest speaker, George W. Hallett, Jr., M.D. of Portland, was introduced by Dr. Burden. Dr. Hallett showed a medical travelogue of South Vietnam.

GEORGE W. BOSTWICK, M.D., *Secretary*

KENNEBEC

A meeting of the Kennebec County Medical Association was held at the Augusta Country Club in Augusta, Maine on May 18, 1967. The meeting was called to order by the President, Robert L. Ohler, M.D.

Dr. Jacob Fine, Professor of Surgery at Harvard Medical University, described his tour of the Far East as a Fulbright Fellow. He visited medical facilities in Hong Kong, Bangkok, Hawaii and Australia.

LUCIEN F. VEILLEUX, M.D., *Secretary*

YORK

Twenty members and guests attended a meeting of the York County Medical Society on June 7, 1967 at the Henrietta D. Goodall Hospital in Sanford, Maine.

Following a social hour and dinner the meeting was called to order by the Secretary. It was voted to instruct our delegates to support the Washington County resolution on the Maternal and Infant Care Program.

A committee consisting of Drs. Carl E. Richards, Paul S. Hill, Jr., Kenneth E. Leigh and Irvin Dorfman was appointed to meet with a committee of lawyers to arrange a joint meeting in October.

The guest speaker was Captain K. V. Kaess who gave a very interesting talk on the Kittery Naval Base.

CHARLES W. KINGHORN, M.D., *Secretary*

News, Notes and Announcements

Department of Health and Welfare Division of Maternal and Child Health Including Services for Crippled Children (By Appointment Only)

Orthopedic Clinics

Augusta – Augusta General Hospital
1:00 p.m.: Aug. 24
Bangor – St. Joseph Hospital
9:00 a.m. and 1:00 p.m.: July 27, Sept. 28
Half-day sessions: 1:00 p.m.: Aug. 24
Fort Fairfield – Community General Hospital
9:00 a.m. and 12:30 p.m.: Sept. 11
Fort Kent – Peoples Benevolent Hospital
10:00 a.m.: Sept. 12
Lewiston – Central Maine General Hospital
9:00 a.m.: July 21, Aug. 18, Sept. 15
Machias – Down East Community Hospital
9:00 a.m.: July 28
Portland – Maine Medical Center
9:00 a.m.: Aug. 14, Sept. 11
Presque Isle – Arthur R. Gould Memorial Hospital
9:00 a.m. and 12:30 p.m.: Sept. 13

Cardiac Clinics

Bangor – Eastern Maine General Hospital
9:00 a.m.: July 28, Aug. 11, 25, Sept. 8, 22
Portland – Maine Medical Center
9:00 a.m.: Every Friday (holidays excepted)

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PRESIDENT'S ADDRESS — *Continued from Page 160*

are members of a profession and of a profession which placed everything secondary to this profession. To preserve this profession, we must participate with careful attention – that is, that our participation is not with the voice of a few but with the cooperation and approbation of the entire Maine Medical Association.

DEPARTMENT OF HEALTH AND WELFARE — *Continued from Page 163*

107 dental technicians have worn our film badges. Of these, only seven dentists and 16 dental technicians wore the badges for more than 2-year periods. The majority were worn for only about 6 months; and in all cases the dose received per week was from less than 2 mR to 15 mR, with an average of 3 mR per week for all badges worn. Periodically a determination has been made by radiation inspectors from the Department of Health and Welfare that the radiation level in the positions occupied by these radiation workers during their employment is less than 25% of the permissible dose to individuals in a controlled area[2] and continuous personnel monitoring is not considered to be essential. Should the mode of operation of the radiation installations change, however, film badges are available on request to determine whether the levels of radiation exposure are sufficiently increased to warrant a regular monitoring program. Many of the 25 smaller hospitals will reinstitute personnel monitoring among radiation workers as one of the conditions of participation for hospitals under the Medicare Program. Personnel monitoring is not required if there is adequate evidence that the exposures will not exceed 25% of the permissible dose to individuals in a controlled area.[3]

There are about 77 radiation installations in Maine using the State's badge program. These installations include 49 hospitals, 8 dental offices, 9 medical clinics and physicians' offices, 2 veterinarians, 2 industries, 2 colleges, and 1 large research laboratory, as well as 4 State agencies.

There are about 248 radiation workers in Maine, including approximately 25 students in a one-semester course in a college, who use materials controlled by the Atomic Energy Commission. Of these, about 141 (56%) are monitored for radiation exposures on a regular basis through the State's film badge program.

By way of comparison, there are about 1,350 radiation workers using radium and the types of x-ray equipment used in industry, educational institutions, and the practice of medicine, dentistry, and other forms of the healing arts. Approximately 440 (32%) are monitored by the State's program.

The radiation exposures associated with medical and dental examinations, when radiation workers are patients under the care of a practitioner of the healing arts, are not assessed under this program.

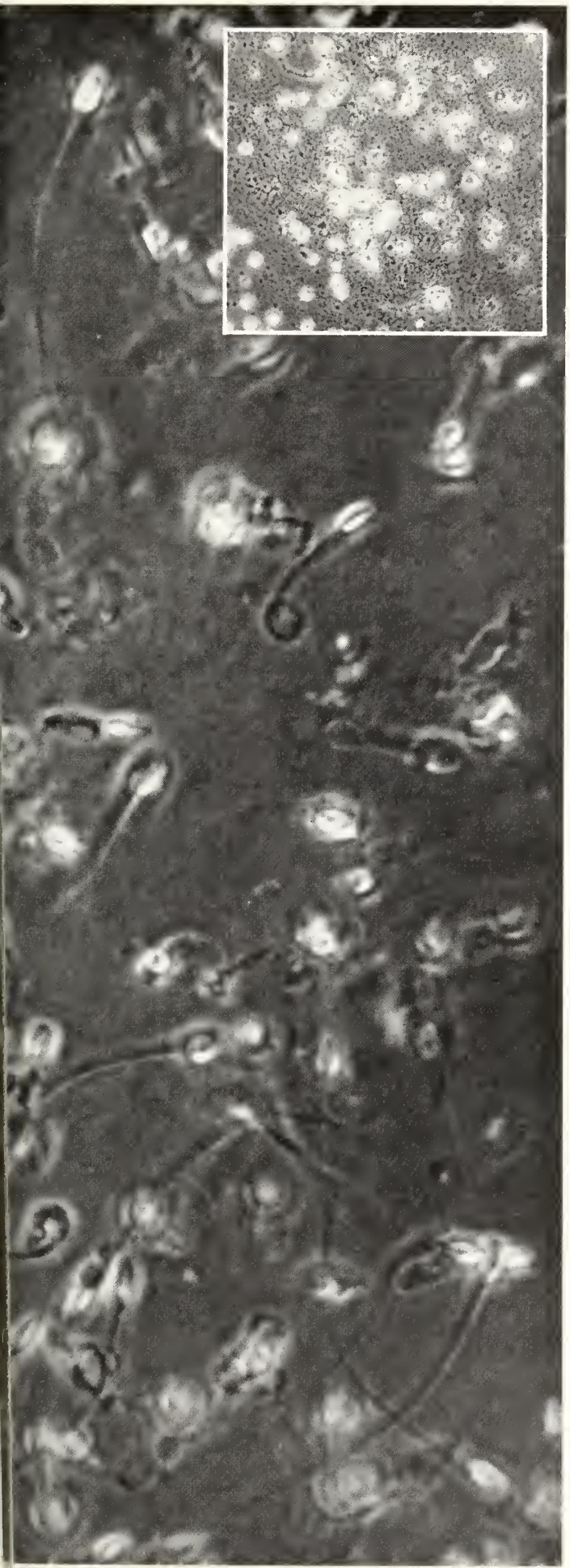
Prior to the institution of this program in 1956, there had been several instances of radiation injuries among dentists and veterinarians in particular, such as severe radiation injuries of the fingers. Since 1956 there has been no known instance of occupationally related radiation injury among the radiation workers in the State of Maine. This improvement is thought to be due in part to the increased awareness of the hazards of ionizing radiation brought about by the State's personnel monitoring program.

The followup program dealing with suspiciously high readings on the film badges has uncovered a few instances of poor radiation practice. One advantage of the approach used in Maine is that the Department of Health and Welfare, through its operation of the film badge program, is alerted to possible over-exposures relatively soon after they occur. This permits prompt followup and facilitates a reconstruction of the circumstances that lead to higher-than-usual badge reading.

Averaged out for the population of the State of Maine, the contribution to the genetic pool from occupational exposure among its radiation workers amounts to somewhat less than 1 mR/year. This is to be compared against radiation exposures amounting to about 100 mR/year from natural background and exposures perhaps in the range of from 50 to 100 mR, due to irradiation of members of the population incidental to the practices of the healing arts in the State.

[2] "State of Maine Rules and Regulations Relating to Protection," Section B-10, page 23, indicates a permissible level of 100 mR/week.

[3] "State of Maine Rules and Regulations Relating to Protection," Section B-10, page 23, indicates a permissible level of 100 mR/week.



New view of an oral contraceptive at work

Although suppression of ovulation remains the primary mode of action of oral contraceptives, newer knowledge indicates that products like Norinyl-1—a combination of both low-dosage progestogen and estrogen for the full treatment cycle—may provide multiple action that helps explain their unexcelled record of contraceptive effectiveness. This report explores the possible secondary protective mechanisms offered by combined hormonal administration.

Accumulating evidence has indicated that sparse, highly viscous cervical mucus has a possible adverse effect on the motility and survival of spermatozoa.

The estrogen-opposing progestational ingredient of Norinyl-1 (norethindrone 1 mg. with mestranol 0.05 mg.) changes the usual midcycle picture of a thin, watery cervical mucus. The result—a built-in barrier that appears to inhibit sperm from reaching the ovum should one be released. The inset in the adjoining photograph shows immobile spermatozoa as they appear in cervical mucus taken from a patient treated with Norinyl-1.

See last page for contraindications, precautions, side effects and dosage.

How the estrogen-opposing action of Norinyl-1 creates cervical mucus that may be hostile to sperm penetration

Normally, estrogen activity during the fertile midcycle stimulates the production of a profuse and watery cervical mucus that permits maximum sperm motility and promotes penetration.

But what happens when Norinyl-1 is administered? Its potent progestogen, norethindrone, opposes estrogen stimulation of cervical mucus. Consequently, the amount of mucus decreases and its viscosity increases. This results in a sparse but thick mucus barrier that appears to diminish the vitality of the sperm and to impair its powers of penetration.

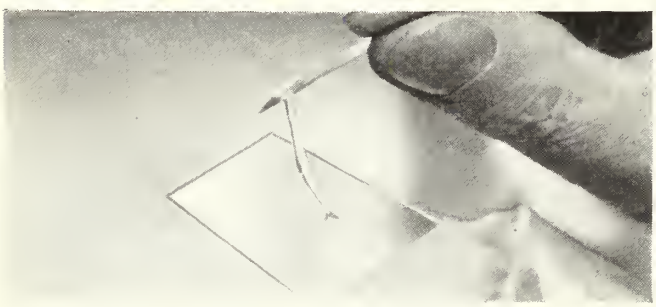
The role of viscous cervical mucus as a secondary action of Norinyl-1

In a report on 89 patients taking this medication,* cervical mucus obtained from cycle day 5 to cycle day 29 appeared scant and thick and exhibited little or no Spinnbarkeit.

In the opinion of this investigator, the effect on cervical mucus may be sufficient to prevent conception.

*Cohen, M. R.: Symposium: Mechanisms of Action of Low Dosage Oral Contraceptive, Yale University Medical Center, New Haven, Conn., April 6, 1967

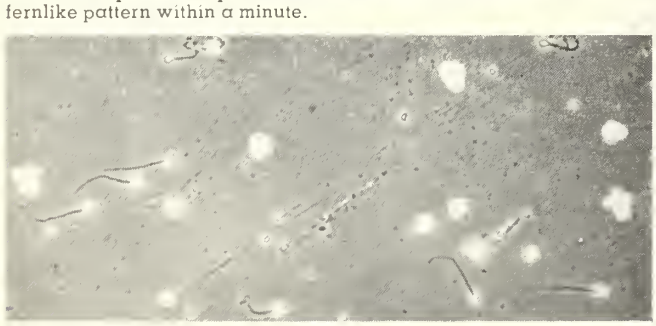
Normal cervical mucus at midcycle in untreated patient is known to permit sperm motility... promote sperm penetration.



Cervical mucus is thin and watery with a stretchability (Spinnbarkeit) of 15 to 20 cm.

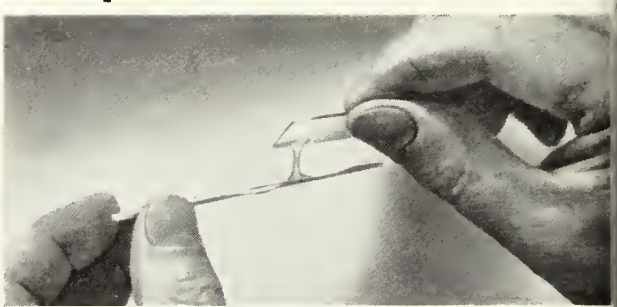


Thin, watery mucus crystallizes into this well-defined, fernlike pattern within a minute.

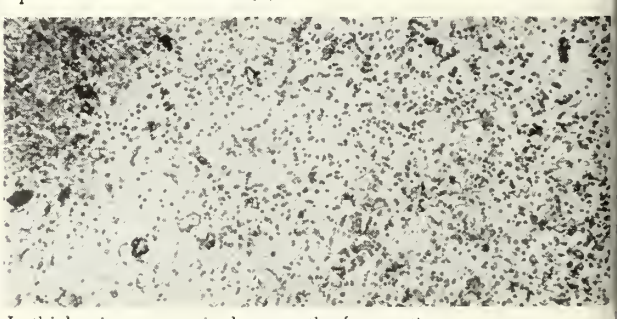


Spermatozoa appear healthy, are active and freemoving.

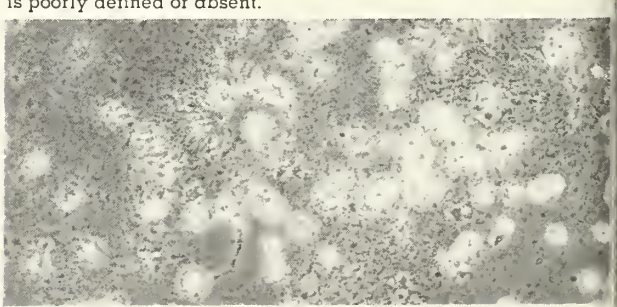
Viscous cervical mucus at midcycle produced by Norinyl-1 appears to impair sperm vitality... inhibit penetration.



Cervical mucus is scanty, thick and viscous. Spinnbarkeit is 1 cm. or less.



In thick, viscous cervical mucus the fern pattern is poorly defined or absent.

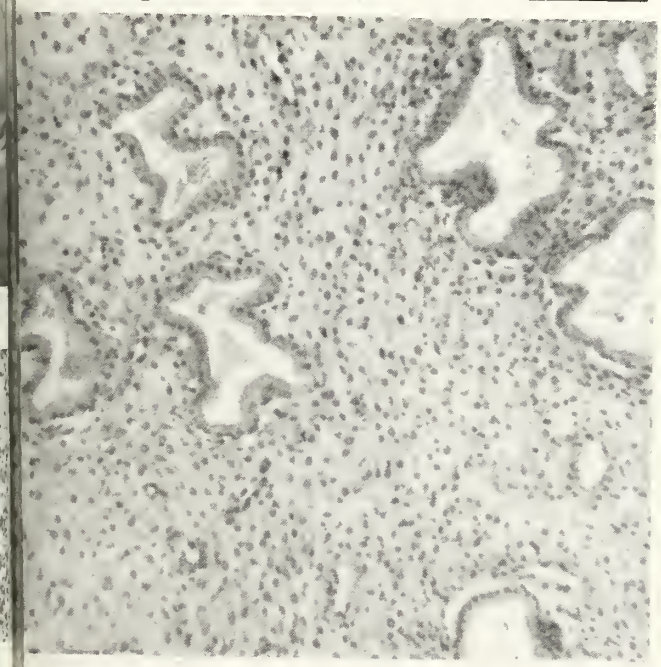


Immobile spermatozoa as they appear in cervical mucus taken from a patient treated with Norinyl-1.

How Norinyl-1 alters normal endometrial responses— another possible protective mechanism

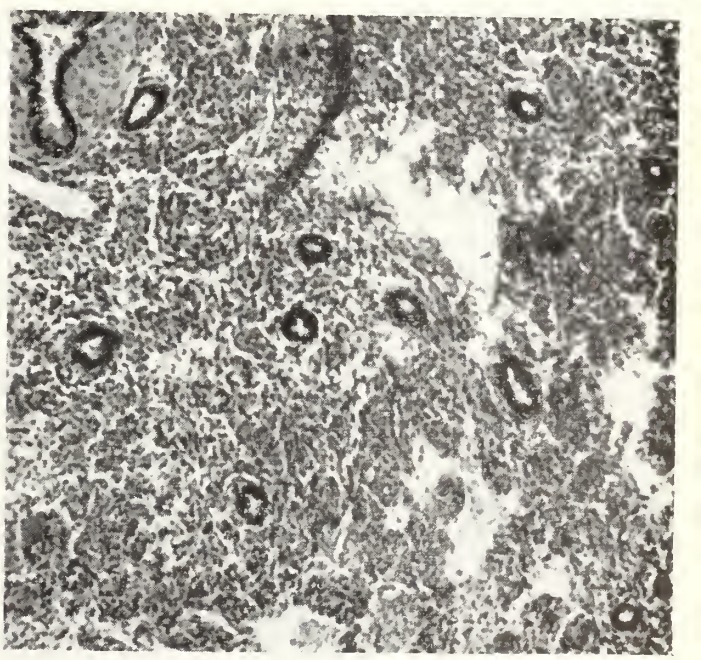
et us suppose that an ovum is released—as occurs in an ccasional, rare case—and somehow a sperm succeeds in enetrating the cervical mucus barrier. Should this come about, ne additional action of Norinyl-1 may protect the patient om unwanted pregnancy. The theory is that progestogen intake akes endometrial tissue unreceptive to implantation.

ndometrium of ntreated patient



rmally, the endometrium progresses through roliferative phase stimulated by estrogen and a retory phase stimulated by progesterone. ing the secretory phase the endometrium is eptive to the fertilized ovum.

Endometrium produced by Norinyl-1



When Norinyl-1 is administered its progestogen component—norethindrone—accelerates the secretory phase and suppresses glandular and vascular development.

last page for contraindications, precautions, side effects and dosage.

new Norinyl-1® tablets

(norethindrone 1mg c mestranol 0.05mg.)

effective fertility control
on half the previous dosage

maintains ratio
of the established
norethindrone/mestranol
combination

lower cost

new Norinyl-1®

(norethindrone 1mg. c̄ mestranol 0.05mg.) tablets

Reduction of oral contraceptive dosage to lowest effective levels has become a well-accepted principle of conservative medical practice. In keeping with this view, Norinyl is now available in a new strength in which *both* norethindrone and mestranol are reduced 50 percent. Studies show that Norinyl-1 achieves fertility control with only 1.0 mg. of combined progestogen and estrogen per tablet.

Norethindrone was first reported for use as a progestational agent in human beings in 1955. Norethindrone 2 mg. with mestranol 0.1 mg., as an oral contraceptive, is currently in use by over 2,000,000 women. Clinical experience now establishes that Norinyl-1 also amply meets the criteria of reliability and safety.*

*Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965.

PRESCRIBING INFORMATION

Contraindications: 1. Patients with thrombophlebitis or with a history of thrombophlebitis or pulmonary embolism. 2. Liver dysfunction or disease. 3. Patients with known or suspected carcinoma of the breast or genital organs. 4. Undiagnosed vaginal bleeding.

Warnings: 1. Discontinue medication pending examination if there is sudden partial or complete loss of vision or if there is a sudden onset of proptosis, diplopia, or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn. 2. Since the safety of Norinyl-1 in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods, pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule, the possibility of pregnancy should be considered at the time of the first missed period. 3. Detectable amounts of the active ingredients in oral contraceptives have been identified in the milk of mothers receiving these drugs. The significance of this dose to the infant has not been determined.

Precautions: 1. The pretreatment physical examination should include special reference to breast and pelvic organs, as well as a Papanicolaou smear. 2. Endocrine and possibly liver function tests may be affected by treatment with Norinyl-1. Therefore, if such tests are abnormal in a patient taking Norinyl-1, it is recommended that they be repeated after the drug has been withdrawn for 2 months. 3. Under the influence of estrogen-progestogen preparations, preexisting uterine fibroids may increase in size. 4. Because these agents may cause some degree of fluid retention, conditions that may be influenced by this factor, such as epilepsy, migraine, asthma, cardiac, or renal dysfunction, require careful observation. 5. Although a cause and effect relationship has not been established, Norinyl-1 should be used with caution in patients with a history of cerebrovascular accident. 6. In relation to breakthrough bleeding, as in all cases of irregular bleeding *per vaginam*, nonfunctional causes should be borne in mind. In cases of undiagnosed vaginal bleeding, adequate diagnostic measures are indicated. 7. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. 8. Any possible influence of prolonged Norinyl-1 therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. 9. A decrease in glucose tolerance has been observed in a small percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving Norinyl-1 therapy. 10. Because of the occasional occurrence of thrombophlebitis and pulmonary embolism in patients taking oral contraceptives, the physician should be alert to the earliest manifestations of the disease. A cause and effect relationship has not been demonstrated. 11. Because of the effects of estrogens on epiphyseal closure, Norinyl-1 should be used judiciously in young patients in whom bone growth is not complete. 12. The age of the patient constitutes no absolute limiting factor, although treatment with Norinyl-1 may mask the onset of the climacteric. 13. The pathologist should be advised of Norinyl-1 therapy when relevant specimens are submitted.

Side Effects: The following adverse reactions have been observed with varying incidence in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms, breakthrough bleeding, spotting, change in menstrual flow, amenorrhea, edema, chloasma, breast changes (tenderness, enlargement and secretion), loss of scalp hair, change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately postpartum, cholestatic jaundice, erythema multiforme, erythema nodosum, hemorrhagic eruption, migraine, rash (allergic), itching, rise in blood pressure in susceptible individuals, mental depression.

The following occurrences have been observed in users of oral contraceptives. A cause and effect relationship has not been established: thrombophlebitis, pulmonary embolism, neurooocular lesions.

The following laboratory results may be altered by the use of oral contraceptives: increased bromsulphalein retention and other hepatic function tests, coagulation tests (increase in prothrombin, factors VII, VIII, IX and X), thyroid function (increase in PBI and butanol extractable protein-bound iodine and decrease in T^3 values), metapyrone test, pregnanediol determination.

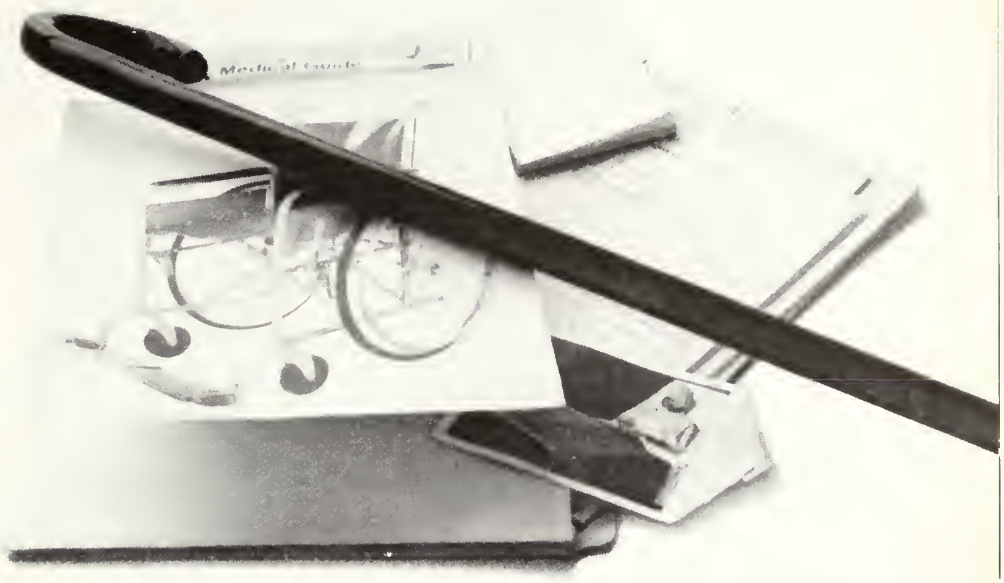
Other side effects reported to have occurred in association with use of this drug are dizziness, hirsutism, pains in legs, back, chest and abdomen, dysuria, drowsiness, vaginal discharge, libido increased and decreased, eruptions, hypermenorrhea, hypomenorrhea, increased appetite, G.U. infections, varicose veins, abdominal fullness, acne, headache, nervousness, allergies, blurred vision, pain in eyes, and itching in eyes. For complete clinical data, see package insert.

Dosage and Administration: 1. One tablet of Norinyl-1 is administered orally for 20 days beginning on day 5 of the menstrual cycle. (Count day 1 of the cycle as the first day of menstrual bleeding.) Repeat this dosage schedule for each cycle. 2. If no menstrual period occurs after a cycle of treatment (20 tablets) in which patient adhered to the schedule, the patient must be instructed to resume taking the Norinyl-1 tablets 7 days after the previous 20-day course was completed. For example, if the last pill of a previous cycle had been taken on a Sunday, then a new cycle of treatment should begin on the following Sunday. 3. In the puerperal woman, it is recommended that the first cycle of treatment should begin on day 5 of the first menstrual cycle. However, Norinyl should not be administered during lactation.

Availability: Norinyl-1 (norethindrone 1 mg. with mestranol 0.05 mg.)—Dispensers of 20 and 60 and bottles of 250 tablets.

norethindrone — an original steroid from

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Vitamin B_1 (as Thiamine Mononitrate)	10 mg
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Vitamin B_6 (Pyridoxine HCl)	2 mg
Vitamin B_{12} Crystalline	4 mcgm
Vitamin C (Ascorbic Acid)	300 mg
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Calcium Pantothenate	20 mg

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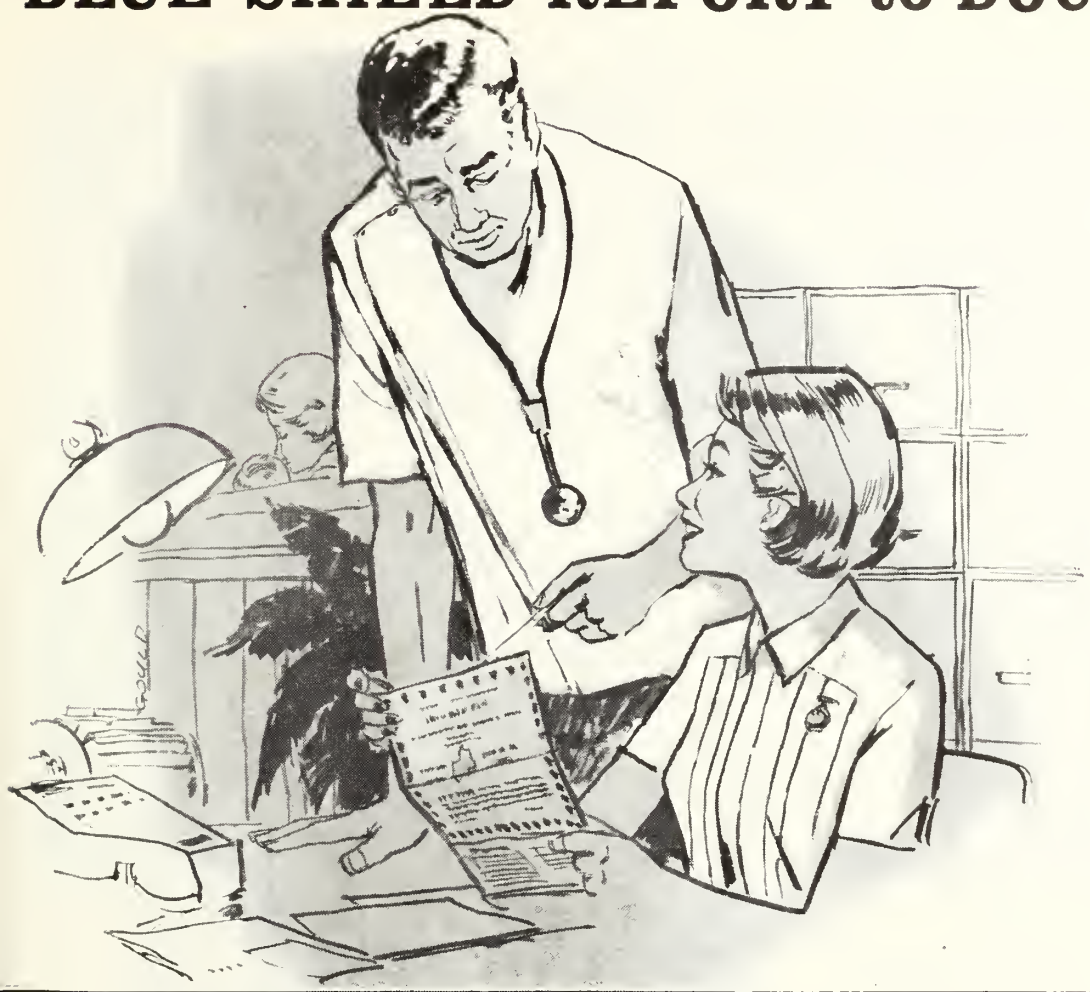
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BLUE SHIELD REPORT to DOCTORS



REPORT # 4

Effective June 15, AHS has liberalized its diagnostic office benefit program on the following services:

- X-ray examinations (other than of teeth)
- Electrocardiograms (charges up to $12.50 per day)
- Electroencephalograms
- Basal metabolism tests
- Protein Bound iodine tests
- Radioactive iodine uptake tests
- Pathology examinations of spinal fluid or of surgically removed tissue
- 1-3 tests

Within 72 hours of an accident or related within 60 days to other covered services, the scheduled x-ray benefit or the physician's charge, whichever is less, plus the customary and reasonable charges for all other covered diagnostic procedures listed above will be paid.

If the diagnostic procedures do not qualify within the provisions of the foregoing paragraph, a $7.50 deductible each 31 day period will be applicable.

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In peptic ulcer... antacid therapy with a new benefit



CONTAINS A BALANCED COMBINATION OF THE MOST WIDELY USED ANTACIDS— FOR RAPID NEUTRALIZATION. PLUS SIMETHICONE— TO CONTROL THE FACTOR WHICH ANTACIDS ALONE CANNOT INFLUENCE.

Mylanta®

- In Mylanta, aluminum and magnesium hydroxides are balanced to minimize the chance of constipation or laxation and still achieve rapid acid neutralization and pain relief.
- The positive action of simethicone helps relieve the painful gas symptoms which often accompany the peptic ulcer syndrome.
- The nonfatiguing flavor and smooth, nongritty consistency of tablets and liquid encourage continued patient cooperation during long-term therapy.

Composition: Each Mylanta chewable tablet or teaspoonful (5 ml.) of liquid contains: magnesium hydroxide, 200 mg.; aluminum hydroxide, dried gel, 200 mg.; simethicone, 20 mg. **Dosage:** one or two tablets, well chewed or allowed to dissolve in the mouth, or one or two teaspoonfuls of liquid to be taken between meals and at bedtime.

The Stuart Company, Pasadena, California
Division of Atlas Chemical Industries, Inc.

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Tandearil®

oxyphenbutazone

Therapeutic Effects: Tandearil is a nonhormonal compound which may rapidly resolve inflammation and help restore normal joint function. Its action does not affect pituitary-adrenal function or impair immune responses. Its value in osteoarthritis is especially noteworthy because this disorder responds inconsistently to steroids and is often resistant to salicylates. Further, indomethacin is limited only to osteoarthritis of the hip, whereas oxyphenbutazone is effective in all forms of the disease.

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should be closely supervised and should be warned to report immediately fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage. Make regular blood counts. Discontinue the drug and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The most common are nausea, edema and drug rash. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. Infrequently, agranulocytosis, or a generalized allergic reaction may occur and require withdrawal of medication. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported but cannot definitely be attributed to the drug. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

Dosage in Osteoarthritis: The initial daily dosage in adults is 300-600 mg. in divided daily doses. When improvement occurs, dosage should be decreased to the minimum effective level; this should not exceed 400 mg. daily, and is often achieved with only 100-200 mg. daily.

For complete details, please refer to full prescribing information. 6562-VI(B)R

Availability: Tablets of 100 mg.

Geigy

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Division of Geigy Chemical Corporation
Ardsley, New York

Geigy

Tandearil®
oxyphenbutazone

helps osteoarthritic joints move again



3 out of 4 osteoarthritics completely or markedly improved

Sperling, I.L.: 3 Years' Experience with Oxyphenbutazone in the Treatment of Rheumatic Disorders, Applied Therapeutics 6:117, 1964.	76.9% of 407 patients
Watts, T.W., Jr.: Treatment of Rheumatoid Disorders with Oxyphenbutazone, Clin. Med. 73:65, 1966.	84.6% of 39 patients

Please see adjoining page for brief prescribing summary

TA-4919 PC

Against these three major pathogens…



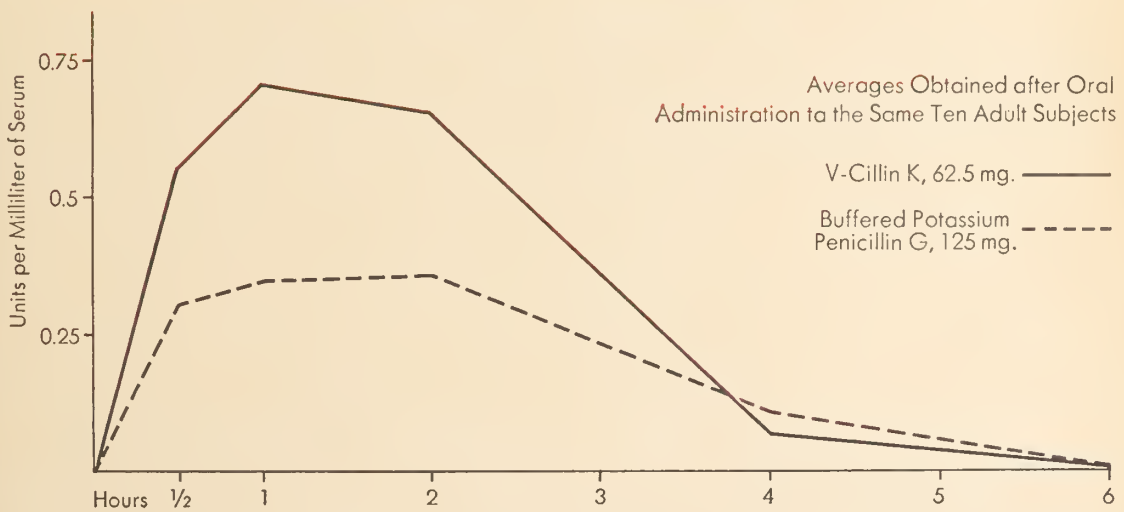
V-Cillin K® provides dependable oral antibacterial activity

because it combines a high degree of in-vitro activity...

Antibiotic	Stoph. Aureus (Penicillin-Sensitive) MIC (mcg./ml.) Median	Range	Streptacaccus, Group A MIC (mcg./ml.) Median	Range	Diplococcus Pneumaniae MIC (mcg./ml.) Median	Range
Penicillin V	0.02	0.02-0.04	0.02	0.003-0.4	0.01	0.005-0.2
Penicillin G	0.02	0.005-1.6	0.005	0.002-0.2	0.02	0.01-0.1
Methicillin	1.6	0.4-6.3	0.2	0.1-0.4	0.2	0.1-1.6
Oxacillin	0.4	0.1-3.1	0.04	0.02-0.4	0.1	0.04-0.8
Cloxacillin	0.2	0.2-0.8	0.1	0.1-0.8	—	—
Nofcillin	0.4	0.2-0.8	0.04	0.02-0.1	0.02	0.02-0.2
Ampicillin	0.2	0.1-0.8	0.02	0.01-0.04	0.02	0.01-0.04

Adapted from Klein, J. O., and Finland, M.: New England J. Med.,269:1019, 1963.

with high blood levels, even in the presence of food



Adapted from Griffith, R. S., and Black, H. R.: Current Ther. Res., 6 253, 1964.

V-Cillin K® Lilly 700636

Potassium Phenoxymethyl Penicillin

(See next page for prescribing informatio

New 500 mg. tablets...a more convenient way to give high doses



Description: V-Cillin K is the potassium salt of V-Cillin® (phenoxymethyl penicillin, Lilly). This chemically improved form combines acid stability with immediate solubility and rapid absorption. Higher serum levels are obtained more rapidly with this penicillin than with equal oral doses of penicillin G. The higher serum levels and acid stability of V-Cillin K make it a more dependable penicillin for oral use.

V-Cillin K, Pediatric, is an oral solution of clinically proved V-Cillin K in teaspoon dosage form. When mixed as directed, each 5 cc. (approximately one teaspoonful) will contain 125 mg. (200,000 units) phenoxymethyl penicillin as the potassium salt.

Indications: V-Cillin K has been shown to be effective in the treatment of streptococcus, pneumococcus, and gonococcus infections as well as infections caused by sensitive strains of staphylococci. It may be used for the prophylaxis of streptococcus infections in patients with a history of rheumatic fever and for the prevention of bacterial endocarditis after tonsillectomy and tooth extraction in those patients with a history of rheumatic fever or congenital heart disease.

Contraindication: V-Cillin K should not be administered to a patient with a history of penicillin hypersensitivity.

Warnings: In rare instances, the use of penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin and in those with bronchial asthma or other allergies. Resuscitative drugs should be readily available for emergency administration. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for relief of immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: V-Cillin K should be used cautiously, if at all, in a patient with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with hi parenteral dosage schedules, frequent evaluation of the renal a hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory stud (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth pencillin-insensitive organisms. In such cases, its administration sho be discontinued, and appropriate measures should be taken.

Adverse Reactions: Although serious allergic reactions are much l common with administration of oral penicillin than with intramuscu forms, manifestations of penicillin allergy may occur.

Penicillin is a substance of low toxicity, but it does possess a sign cant index of sensitization. The following hypersensitivity reactic associated with the use of penicillin have been reported: skin rash ranging from maculopapular eruptions to exfoliative dermatitis; u caria; and reactions resembling serum sickness, including chills, fev edema, arthralgia, and prostration. Severe and often fatal anaphyla has occurred (see Warnings). Hemolytic anemia, leukopenia, thro bocytopenia, and nephropathy are rarely observed side-effects a are usually associated with high parenteral dosage.

Administration and Dosage: For Tablets V-Cillin K and for V-Cillin Pediatric, the usual dosage ranges from 125 mg. (200,000 units) thr times a day to 500 mg. (800,000 units) every four hours. For infor the daily dosage may be 50 mg. per Kg. of body weight divided i three doses.

Beta-hemolytic streptococcus infections without associated b teremia may be treated with 200,000 to 400,0000 units three times day. Therapy should be continued for a minimum of ten days to preve development of rheumatic fever and/or other serious complicatio Dosage for routine streptococcus prophylaxis in patients with a histo of rheumatic fever or congenital heart disease may be 200,000 u once or twice daily. When such patients undergo tonsillectomy, to extraction, or other minor surgery, the prophylactic dose should 500,000 units every six hours given two days prior to surgery and two days postoperatively. If oral medication is not feasible on the d of surgery, parenteral therapy should be considered. Mild to mod ately severe pneumococcus pneumonia has been treated effectiv with 250 mg. every six hours.

In staphylococcus infections, 400,000 units or more should be giv every six to eight hours in conjunction with indicated surgical pro dures.

For gonorrhea in males, 500 mg. (800,000 units) every four hours three doses may be employed; in females, 500 mg. every four ho for six doses are recommended. Refractory infections generally respo to a second treatment three to four days following completion of t first. Treatment of gonorrhea with severe complications should individualized, with prolonged and intensive treatment. Patients with suspected lesion of syphilis should have a dark-field examination b fore receiving penicillin and monthly serologic tests for a minimum three months.

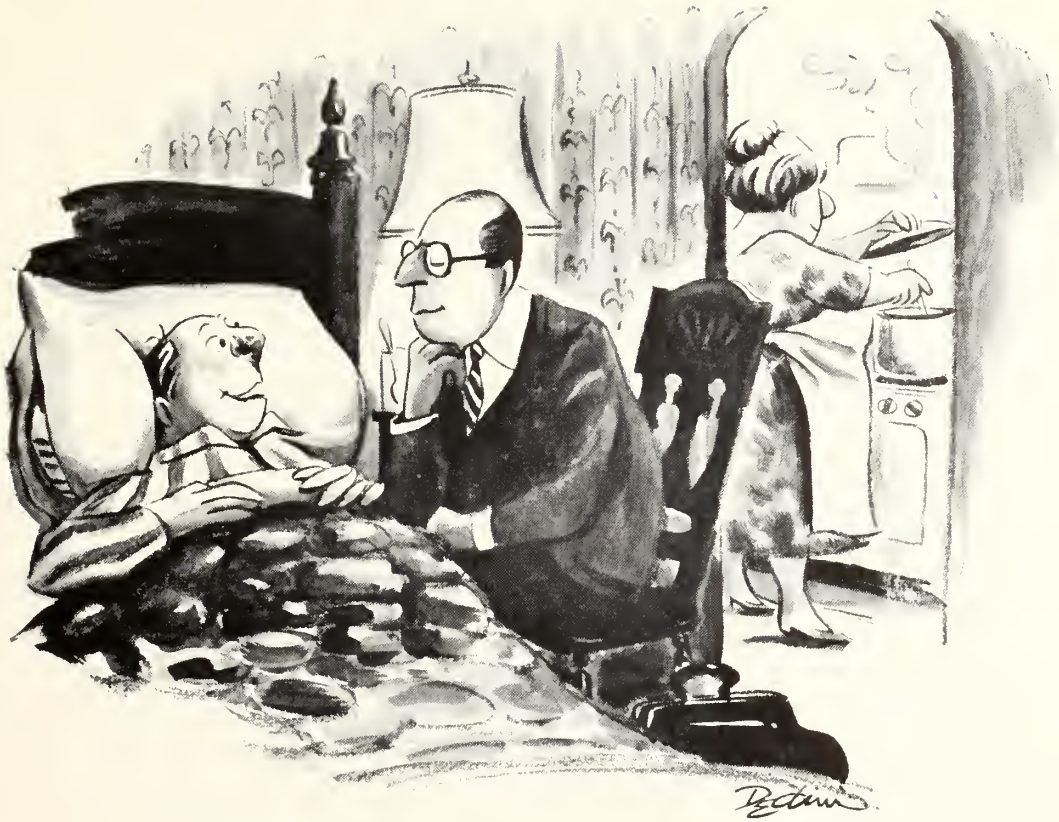
How Supplied: Tablets V-Cillin K, U.S.P., 125 mg. (200,000 units), bottles of 50 and 100; and 250 mg. (400,0000 units) and 500 m (800,000 units), in bottles of 24 and 100.

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Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver-function tests advisable during protracted therapy.

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VOLUME 58 AUGUST, 1967 NUMBER 8

Augusta General Hospital Number

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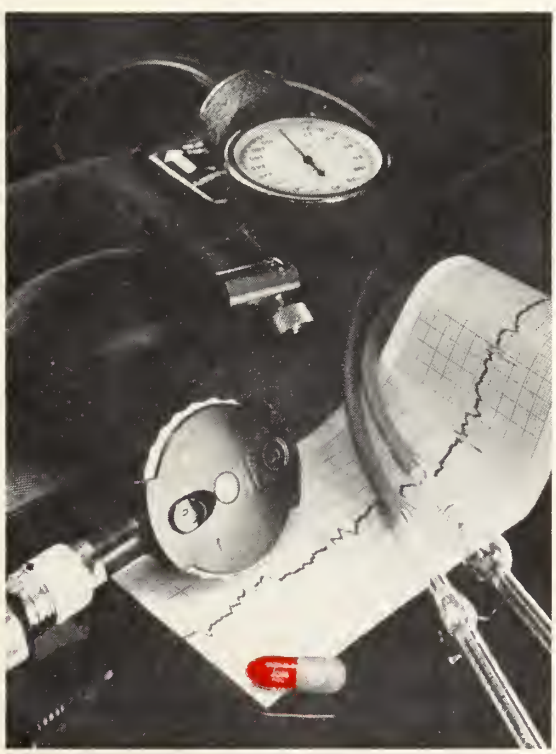
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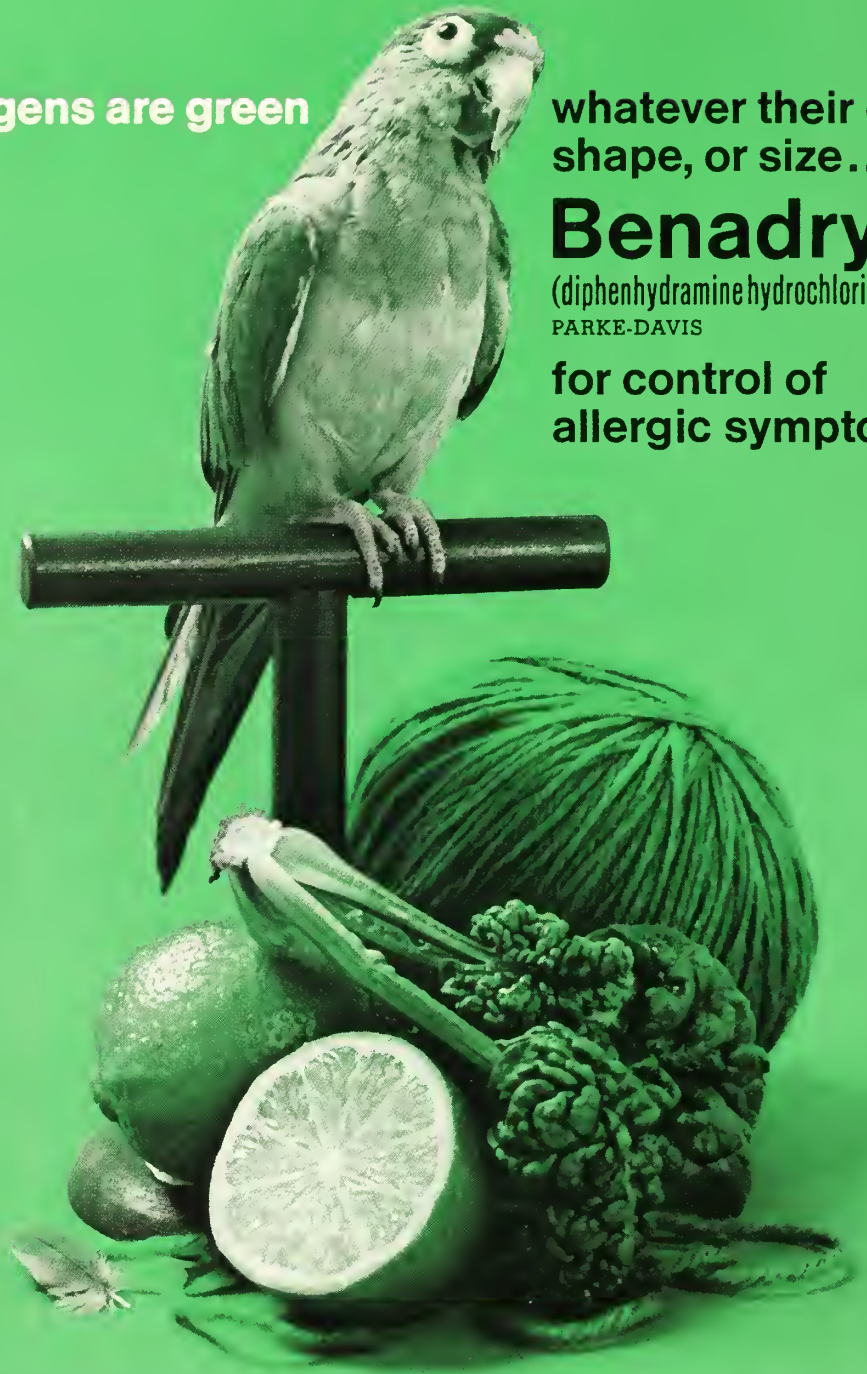
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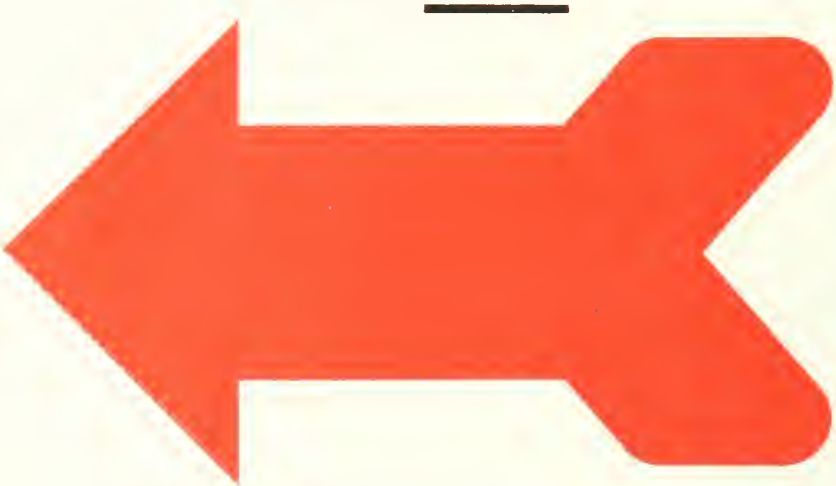
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References:
1. Pullen, F. W. 2nd, and Montgomery, W. W.: Arch. Otolaryng. 77:24, 1963.
2. Frank, D. I.: Curr. Therap. Res. 6:158, 1964.
3. Fierberg, A. A.: Ann. Allergy 22:324, 1964.

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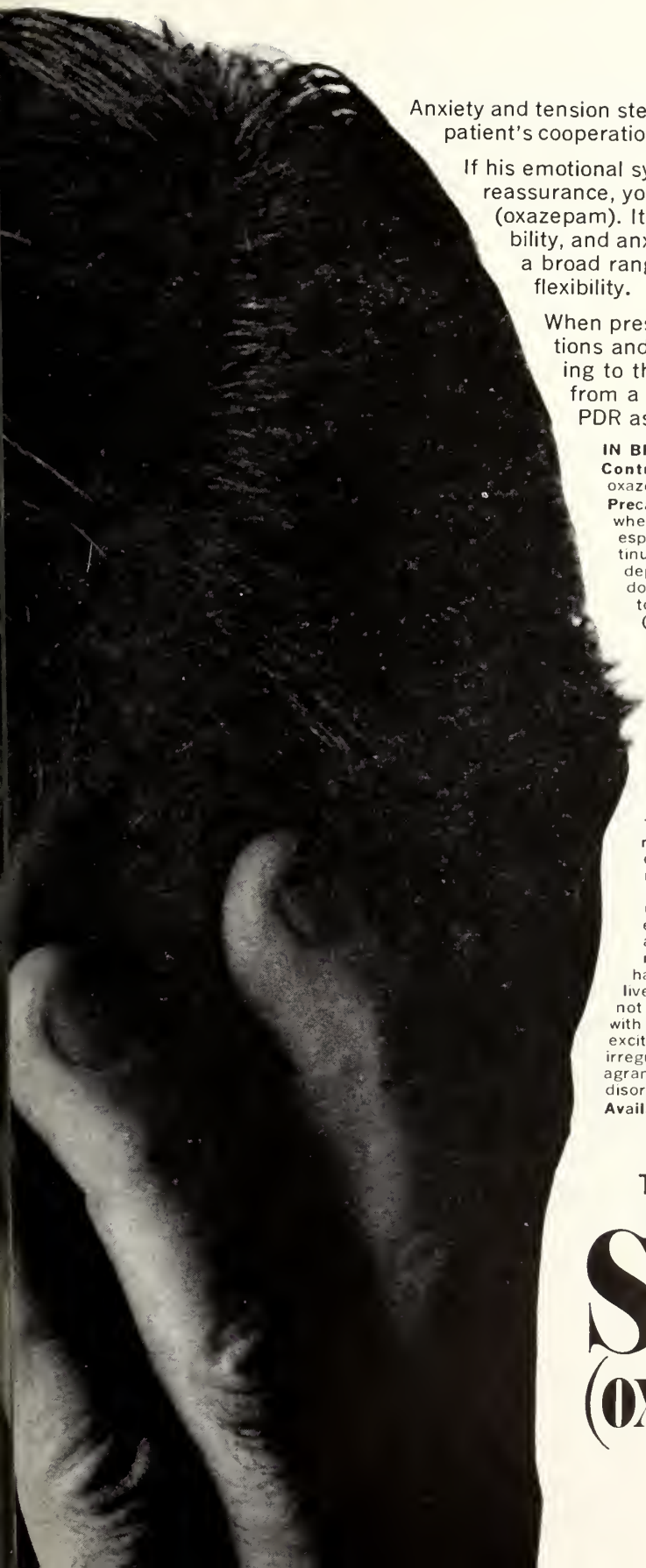
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References: 1. Shuman, C.: Am. J. Med. Sci., 225:54, 1953. 2. Perchuk, E., et al.: Angiology, 12:102, 1961. 3. Rawls, W., et al.: Med. Times, 87:818, 1959.

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Volume Fifty-Eight | Brunswick, Maine, August, 1967 | Number 8

The Recognition of Renal Pathology Through Radioisotope Color Scanning

Demitrios Nikolaidis, M.D.*

The intravenous pyelography is an established and very useful procedure in the morphologic analysis of the urinary tract. Hypaque,® Renografin® and other Iodinated opaque media used are known to be excreted primarily as glomerular filtrates. Consequently, assuming that there is no gross glomerular destruction, good delineation of the collecting system is obtained. Any pathologic changes then within or next to the collecting system of the kidney should distort it and thus become evident on the obtained IVP.

The renal scan is performed to evaluate the renal parenchyma. The material used is chlormerodrin labeled with either Hg 203 or Hg 197. These substances, in contrast to the opaque media, are extracted from the plasma to be temporarily retained and then excreted by the cells of the proximal convoluted tubules. Renal vascular or parenchymal injury is reflected on the scan since the concentration of the chlormerodrin in the kidneys depends on the renal blood flow and the presence of normal renal tubules.

The color scan, which this paper is dealing with, has remarkable properties since it can reflect in a semiquantitative manner the condition of the tubular mass. Focal lesions become obviously distinct as they contrast sharply with the nearby normal parenchyma.

Methodology

Without any previous preparation the patient is given 100 u.c. of Hg 203 or 150 u.c. of Hg 197 intravenously. The dose for children and young people is 1.5 u.c./kg body weight. We prefer Hg 197 to Hg 203 for children and young people in view of the lower radiation to the kidneys. About one hour after the injection the scan is started with the patient in the prone position and the detector at about 1 cm. from the skin.

The unit used in our department is the Picker magnascanner III with the 3 by 2 inch crystal and with the special color attachment. The color calibration is adjusted so that the area of maximum activity produces a bright maroon color on the scan. Other factors such as speed, dot factor, density and range differential varied according to the obtained count rates. The scanning time is approximately forty minutes.

Interpretation

The photoscan is the picture in black and white obtained on a regular x-ray film. Fig. 1 is that of a normal renal photo scan. Note that the kidneys are uniformly black. In cases of scattered parenchymal disease or renal vascular insufficiency the kidney scan has a spotty appearance. On the other hand a space occupying lesion will not take up activity and will appear as a defect. With the photoscan we are relatively limited. Black dots indicate normal parenchyma, few gradations of gray where some pathology may be and then white or nothing on the film where there is destruction or replacement of renal parenchyma.

In contrast to this, the color scan has eight colors; from maroon, red, orange, yellow, green, blue, violet down to white. Every color represents 12.5% difference in the activity from the one above and the one below respectively. Consequently, the maroon indicates that 87.8 to 100% of the tubules at that particular point are present and function properly, red color that 75 to 87.5% and so on. Fig. 2 presents a normal renal color

*From the Department of Radiology and Nuclear Medicine, Augusta General Hospital, Augusta, Maine 04330.



Fig. 1. Normal renal photoscan. The scan is performed with the patient prone. Consequently the oval density on the left represents the patient's left kidney and the one on the right, the right kidney. Note the uniform distribution of the radioactivity. The grey dots on the right represent the background from the liver.



Fig. 3. The relatively large defect at the upper pole of the right kidney represents a space occupying area. Note the somewhat decreased radioactivity at the upper pole of the left kidney.

scan. Note the uniform maroon or red center. At the periphery of the kidney as the parenchyma becomes thinner the color changes gradually to orange, yellow, green and so on. If there is destruction or replacement of the tubular mass it will be shown on the screen as color other than maroon or red depending on the degree of destruction or replacement.

We have performed a large number of renal scans and become very impressed with the information that can be obtained from the color scan. However, because of the obvious limitations of space we decided to present only one case hoping to demonstrate our points.

Case Report

An eighteen-year-old boy was admitted to the hospital because of left flank pain and hematuria after playing football. The BUN and B.P. were normal and there was no known family history of renal disease. On the obtained IVP there was separation and distortion of the calyces of the upper pole of the right kidney finding which was consistent with a space-occupying lesion. The calyces on the left did not look entirely normal. A renal scan using Hg 197 was performed. The photoscan, Fig. 3, shows a defect or "cold area" at the upper pole of the right kidney which coincided with the finding on the IVP. There was some decreased activity at the upper pole of the left kidney. However the color scan, Fig. 4 shows definite pathologic cases bilaterally. An irregular distribution of variety of colors is seen which represents different degrees of destruction, replacement or absence of tubular structures. On the basis of the color scan the diagnosis of polycystic disease was made. At surgery a large cyst was removed from the right kidney and biopsy specimens of the kidney were taken and sent to the laboratory. The tissue sections were consistent with polycystic disease.

Advantages of the Renal Scan

The Renal Scan does not require any special preparations.

It is a simple and easy procedure.

It is free of complications and has none of the allergic problems that may exist with organic iodides.

It can be performed in patients in plaster cast and very obese where the inadequate x-ray penetration may be a problem for the intravenous pyelography.

The radiation to the kidneys is low. When Hg 197 is used the amount of radiation is about equal to that given when a plain film of the abdomen is taken.

The color scan in particular presents more objective semi-quantitative data regarding the functional status of the kidney parenchyma. And most important of all the color scan is very easy to be interpreted.

In many cases the color renal scan, at least in our hands, was found to be more helpful than the photoscan in the more accurate evaluation of renal pathology.



Fig. 2. Normal renal color scan.



Fig. 4. The lesion at the upper pole of the right kidney is obvious. However, note the fine irregular distribution of colors throughout the kidneys representing the multiple lesions. Each color corresponds with a specific percentage of functioning tissue present at a particular point.

Review of the Applications for Renal Scan

1. Evaluation of renal lobulation.
2. Tumors or cysts especially those that are not close to the collecting system to produce changes on the IVP.
3. Renal infarction.
4. Renal trauma.
5. Renal abscesses.
6. Hypertention with renal artery or parenchymal disease.
7. Renal failure.
8. Ectopic or displaced kidneys.
9. Diffuse involvement like in sarcoidosis, amyloidosis, etc.
10. In phenacetin nephropathy the function of the kidney may be severely affected. The extent of the damage may not be apparent on the excretory urography and the two examinations supplement one another.
11. Indication for an operative relief of an obstruction. The renal handling of chlormerodrin and consequently the obtained pattern on the renal scan could be a decisive factor to whether or not an operation is indicated and possibly predict the expected degree of prompt renal tubular and vascular recovery.

Related Recent Research

G. S. Johnston and G. P. Murphy[1] obtained serial renal scans in animals after acute obstruction of the ureter lasting different times. Then they repeated the scan after relieving the obstruction. They demonstrated a progressive decline in renal concentration of Hg 203. In their experiments they found that the kidney function returns to normal if the ureteral destruction is released within 3 days. Prompt return of function was not seen after 4 days of complete ureteral obstruction.

When the ureter is occluded pressure from the filtering glomerulus is transferred to the kidney tissues adjacent to the renal pelvis. This pressure may become enough to significantly occlude renal blood flow. Then renal parenchymal damage results and soon this may become irreversible.

The mechanism then should be that both glomerular filtration pressure build up may impair the function of the proximal tubule cell and that the same pressure and calyceal deformity may cause inadequacy of the renal circulation.

Comment

The first report on renal scan was published in 1960.[2] Since that time several workers in this field reported the results of very important experimental and clinical work with the conventional renal photoscan.

This paper however wishes to discuss and emphasize, for the first time, the color renal scan and its value in evaluation of renal pathology. Since each color represents a given percentage of concentrated radioactive material in any particular point of the kidney, the interpretation of the color scan is possible in a semi-quantitative manner. Pathologic changes become distinct as they contrast sharply with the nearby normal tubular mass.

The color renal scan is very easily interpreted even by the least familiar with the procedure physicians.

A review of the indications for renal scanning is made. The last in our list, which is very important, is especially stressed in view of the mentioned recent research.

References

1. Johnston, G.S., Murphy, G.P. The effect of acute and chronic ureteral occlusion upon renal handling of Hg 203 chlormerodrin. Am. J. Roentgenol. Radiology Therapy and Nuclear Medicine, 1966, 98, 163-171.
2. Mc Afee, G.P., Wagner, H.N. Jr. Visualization of renal parenchyma by scintiscanning with Hg 203 neohydrin. Radiology, 1960, 75, 820-821.
3. Reba, R.C., Wagner, H.N. Jr., and Mc Afee, J.G. Measurement of Hg 203 chlormerodrin accumulation by kidneys for detection of unilateral renal disease. Radiology 1962, 79, 134-135.
4. MacEnan, D.W., Rosenthall L. Assessment of excretory urography and Radioisotope renal scanning in disease of the kidneys. Radiology 1966, 86, 1010-1020.
5. Freeman, L.M., Kay, C.J., Meng, C.H. The contribution of renal scanning in the evaluation of renal trauma. 1966, 86, 1021-1029.
6. Cohen, M.B. Radioisotope photoscanning of kidneys in urologic disease. J. Urol. 1963, 89, 360-365.
7. Haynie, T.P., Stenart, B.H., Nofal, M.M., Carr, E.A. Jr. and Beierwaltes, N.H. Diagnosis of Renal Vascular Disease and Renal Tumors by Photoscanning. J.A.M.A., 1962, 179: 137-140.
8. Izenstark, J.L., Burden, J.J., Mardis, H.K. and Vazella, R. Clinical indications for kidney scanning. J.A.M.A. 1964, 188, 136-139.
9. Westphal, R.D. et al. Delineation of human kidneys by scintillation scanning. Am. J. Roentgenology 1962, 87: 161-170.
10. Woodruff, M.W., Kibler, R.S., Benter, M.A. and Blaum: Hg 203 Neohydrin Kidney Photoscan: An adjunct to Diagnosis of Renal Disease. J. Urol. 1963, 89: 746-752.

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Diphtheria Outbreak at the State Hospital, Augusta, Maine in 1964

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For almost 60 years the Augusta State Hospital was free of diphtheria. The last known cases were reported in 1894. Prior to this date this illness was a common event and it is found in the Annual Report of the year 1893 that 14 people, including two employees, were afflicted with diphtheria; that the two employees succumbed because of this illness. The Annual Report for the year 1894 stated that 11 patients and one attendant were under observation for question of diphtheria.

In 1963 the Public Health Service reported 432 cases of diphtheria and 175 carriers in the United States. These cases were primarily in the southern portion of this country, distributed by age in the younger and unimmunized population.

The outbreak at the state hospital was unique not only in number of cases but also in the age distribution in the adult population.

In this paper is described what happened in this institution during the period starting March 23, 1964, and ending in August of the same year. The results and the experiences learned during this outbreak are reported.

In the early months of 1964 it was found that many patients and employees complained of sore throats. Clinical diagnoses of streptococcal "throats" were made and several throat and nose cultures sent to the state laboratory confirmed this diagnosis. It was found that the offender was Beta Hemolytic Streptococcus in Group A; most of these patients were treated with Procaine Penicillin.

On March 24, 1964, a female patient, age 74, was referred to the Medical-Surgical Service because of fever, sore throat and question of nuchal rigidity. When the patient was seen by one of the staff the patient appeared to be in acute respiratory distress; the throat was red and white membranes were present on the right tonsil. The temperature was 105°. Clinical diagnosis of diphtheria was made and the State Bacteriological Laboratory, was contacted for advice. New samples from the white membrane were requested. A Fluorescent Antibody Technique was used. A few hours later we were informed that it was diphtheria. While waiting for antitoxin the general condition of the patient deteriorated rapidly. Patient's breathing difficulties increased; the throat revealed more white patches on both tonsils and the pharynx. Since patient was extremely cyanotic, a tracheotomy was performed under local anesthesia. Following this procedure the color of the patient improved and she breathed easily for a while. However, a few hours later the dyspnea and cyanosis increased. At this time a direct laryngostomy was done under local anesthesia demonstrating an edematous red larynx in which the false vocal cords were ulcerated. In spite of treatment given to this patient, she ceased to breath at 7:00 a.m. on March 25, 1964. Attempts to resuscitate this patient, including external cardiac message, failed. (This patient did not receive diphtheria antitoxin.) Postmortem examination was done the same day and revealed that the immediate cause of death was an acute membranous tracheal bronchitis, "diphtheria," bronchopneumonia, bilateral, terminal.

As soon as the clinical diagnosis of diphtheria was confirmed, by the laboratory, the hospital began to work out a plan to prevent the spread of this disease to the rest of the hospital and the community. First all the inmates and the personnel of this hospital received one cc. of combined Tetanus and Diphtheria toxoid (alum precipitated) intramuscularly. This measure was started immediately and completed by March 31, 1964. The ward from which these patients came was closed and placed in quarantine. Throat cultures were taken from all of the attendants, nurses and doctors who were in direct contact with those patients. A policy was established and enforced in which a throat and nose culture were mandatory in any person who complained of sore throat. For almost four weeks all the cases reported were negative for diphtheria. Several cases which were diagnosed as "strep throats" later demonstrated Beta Hemolytic Streptococcus in Group A by laboratory tests and they were treated accordingly with antibiotics. "Procaine Penicillin," 600,000 units, b.i.d., for ten days. For a while there was false confidence that there was good control and the first case was an isolated case of diphtheria.

On April 23, 1964, a young female patient from another ward, who had not had direct communication with the closed ward, was reported to have a severe sore throat which didn't respond to Penicillin. At the time this patient was seen, the general condition of the patient was poor. The patient complained of severe sore throat; temperature was over 104° and during the physical examination it was found that the patient had white membranes in the larynx and the pharynx. Immediately a culture was taken and material for the Fluorescent Antibody Technique was sent to the state laboratory. This was reported a few hours later as positive for diphtheria. While waiting for the cultures and toxigenicity the patient received Aqueous Penicillin, 500,000 units every four hours and oxygen by means of a nasal catheter; -80,000 units of diphtheria antitoxin; 40,000 units given I.V. and 40,000 units given I.M. In spite of this treatment, the general condition of the patient deteriorated rapidly. She appeared more cyanotic and dyspneic. In view of the breathing difficulties a tracheotomy was performed under local anesthesia. Unfortunately, a few minutes later the patient ceased to breath. Resuscitation procedures failed, and the patient was pronounced dead at 3:25 p.m. on April 23, 1964. Postmortem examination showed that the immediate cause of death was an acute pharyngeal tracheal bronchitis, "diphtheria" and laryngeal edema.

At this time more intense isolation restrictions were established and second injections of diphtheria-tetanus toxoid were given to the entire population of the hospital, including both patients and employees.

On April 28, 1964, a third case of diphtheria was found. This time the case was that of a severely burned, middle-aged

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female patient in whom the process of passing an endotracheal tube by the anesthetist, revealed a white membrane in the larynx. Direct culture of this area was taken and the material sent to the state laboratory for Fluorescent Antibody Technique. A few hours later it was reported that this case was positive for diphtheria. While waiting for the report patient received high doses of Aqueous Penicillin and as soon as the laboratory results were known patient was skin tested as preliminary procedure to receiving diphtheria antitoxin. Unfortunately, skin and corneal tests demonstrated that this patient was allergic to diphtheria antitoxin and desensitization was begun. Twenty-four hours were required to give the 80,000 units.

The next day, on April 29, 1964, a fourth case appeared. This was a 66-year-old white female patient who resided on a geriatric ward. She had been complaining of a sore throat. When she was examined she had a temperature of 102°; breathing difficulties and cough, white membranes in the pharynx were present. Fluorescent Antibody Technique was positive for streptococcus and diphtheria organisms. Later culture and toxigenicity were reported as positive. This patient received 500,000 units of Penicillin, I.M. every four hours and 80,000 units of diphtheria antitoxin, 40,000 units I.V. and 40,000 units I.M. Patient was isolated and the ward was placed in quarantine. During the month of May, 30 more cases were reported.

In June, 1964 several clinical cases of diphtheria were seen for the first time on the male service. The cases were found on the male infirmary which had a large population of elderly patients. These 72 patients were treated with Procaine Penicillin, 600,000 units, b.i.d., I.M. for a period of 14 days. During this period of time the employees who were working with them received, as a prophylactic measure, Penicillin oral tablets, 400,000 units, t.i.d. for ten days. Patients and attendants who were allergic to Penicillin received Erythromycin®, 250 mg., q.i.d. for ten days. During this period of time several routine nose and throat cultures were taken from them. After this treatment any patient who was found to have a positive organism by Fluorescent Antibody Technique, was isolated and if the culture became positive he was transferred to the diphtheria ward for treatment with Aqueous Penicillin, 500,000 units every four hours or Erythromycin, 250 mg., q.i.d. (if the patient had some allergic reaction to Penicillin). No patient received antitoxin, since they had all had diphtheria-tetanus toxoid previously.

During the month of June, 44 more cases were admitted to the diphtheria wards and treated.

On June 27, 1964, Mr. W. L. died while on the isolation unit. It was found that the Fluorescent Antibody Technique was positive but culture and toxigenicity were reported later as negative. Unfortunately, permission for postmortem examination was denied by the relatives.

During the month of July one more case was found and was treated accordingly in the isolation unit. Following this case there were found 20 more positive cultures by routine nose and throat examinations, all of them free of symptoms, and they were classified as carriers. All of these cases were treated accordingly with antibiotics, but were not admitted to the isolation unit. "These carriers were found as the result of 1,000 throat and nose cultures taken from the 'clean' areas of the hospital."

During the month of August no clinical cases were found and all nose and throat cultures taken during this period of time were reported negative for diphtheria. Because of this, quarantine was discontinued and this was the end of the outbreak of diphtheria. (Total of 79 cases and 25 carriers.)

Treatment – It was decided in the beginning to treat these patients with antibiotics and the preference was given to Aqueous Penicillin in the amount of 500,000 units I.M. every four hours for a period of two weeks. The patients who were allergic to Penicillin or who developed reactions to Penicillin were treated with Erythromycin, 250 mg., q.i.d. for two weeks. The clinical cases received 80,000 units of diphtheria antitoxin, if possible 40,000 units I.V. and 40,000 units I.M. Patients received Aspirin for headaches and since most of them complained of sore throats it was decided that gargles, using one-half strength of Karo syrup and water, q.i.d. would be of some value in relieving the dryness of the mouth and throat.

Thirty-nine clinical cases of diphtheria were treated with this procedure.

Forty patients were treated with Aqueous Penicillin, 600,000 units, b.i.d. for a period of 14 days. If they developed an allergic reaction or were allergic to Penicillin, they received Erythromycin, 250 mg., until the end of the treatment. These forty patients did not receive diphtheria antitoxin because they had had diphtheria-tetanus toxoid.

The 25 patients who were considered to be carriers were treated only with Procaine Penicillin, 600,000 units, b.i.d., I.M. for a period of 14 days.

Results of the treatment – The first 38 cases treated with diphtheria antitoxin, Aqueous Penicillin or Erythromycin, as has been described before, had satisfactory results. The usual complications in these cases, however, was a late allergic reaction which started at the site of the injection. Since half of this antitoxin was given I.V. in the anticubital region, most of the patients complained of pain in this area when they moved the forearm. The other half of the antitoxin was given I.M. in the buttocks, and so most of the patients complained of pain and preferred to lie in bed rather than walk for a period of one or two days. Some of these cases complained of severe headache; some of them had breathing difficulties, fever and general malaise. Many of these reactions were severe and they were treated with corticosteroids, using Dexamethasone. The following schedule was used; 1 mg. P.O. every eight hours for two days; 0.5 mg. every eight hours for two days; 0.5 mg. every 12 hours for two days; 0.5 mg. once daily for three days. After this the medication was discontinued.

Problems related to case finding – All the suspected cases of diphtheria reported to the Medical-Surgical Service were screened by 1) Physical examination; 2) Throat and nose cultures. This culture material was sent to state laboratories where the Fluorescent Antibody Technique was used to identify diphtheria and separate the cases in which streptococcus was the offender. After positive Fluorescent Antibody Technique tests for diphtheria cultures, later toxigenicity studies proved the severity of this illness.

During the month of May, at the peak of the outbreak, it was found that several persons complained of sore throats with positive Fluorescent Antibody Technique but negative cultures and toxigenicity. These positive reports for Fluorescent Antibody Technique increased the work of the medical teams since these patients needed to be isolated and treated while waiting for the results of the cultures.

During the month of May and June, 101 cases were positive by the Fluorescent Antibody Technique tests. However, it was found later that 39 of these reported cases had negative cultures. Two negative cases by the Fluorescent Antibody Technique later were found positives by cultures and toxigenicity studies. Therefore, it was decided to drop completely the screening procedure by the Fluorescent Antibody Technique and to use the Tinsdale medium instead. This procedure was more accurate. All remaining cases which were positive on the Tinsdale plates were also positive on culture and toxigenicity.

Problems related to treatment – No failures were observed in the patients, both cases and carriers, who were treated with Aqueous Penicillin, 500,000 units, every four hours for a period of 14 days.

Nine carriers who received Procaine Penicillin, 600,000 units, b.i.d. for 14 days, failed to convert and they had to be treated with Aqueous Penicillin in the doses previously described.

Relation of Streptococcus to Diphtheria – Despite the high incidence of sore throats that preceded the outbreak of diph-

theria only six cases were found where the patient had a strep throat preceding diphtheria episode.

Criteria for discharging patients from the isolation unit – It was decided from the beginning that regardless of the treatment and the time involved the patient had to have three consecutive negative nose and throat cultures taken at 48 hour intervals, starting the first culture three days after the medication was discontinued, before he could be discharged safely.

How the community was protected – Following the discovery of the first clinical case of diphtheria, attempts to find out how the disease was introduced to the hospital and how the disease was transmitted from the first case to the second case failed completely. Review by the Diphtheria Surveillance Unit, Communicable Disease Center, Atlanta, Georgia, was unable to explain how the next cases were infected but this Unit gave the hospital specific instructions to control the disease.

From the beginning mass immunization with diphtheria-tetanus toxoid was done on the resident population of the hospital. Except for the first patient who did not receive diphtheria-tetanus toxoid; the patient who received only one injection on March 30 (the second patient with diphtheria) and seven patients who had only two injections, the rest of the hospital population received three immunizations. As has been said before, the first was on March 30 and 31; the second on April 23 and 24 and the third began on May 5 and ended on May 13, 1964.

From the beginning of the outbreak the sick patients were isolated and the rest of the patients who were exposed to them were placed under separate quarantine.

Isolation and subisolation units were formed as the number of cases increased.

In March the first case was reported. In April, three cases; in May, 30 cases; in June, 44 cases and in July one case. These 78 cases ranged in age from 17 to 84. There were 1700 patients in the hospital on an average, and during this period, and about 100 patients were admitted monthly. This hospital had 640 employees at this time.

Any clinical case or suspicious case was not permitted to have visitors.

Special attention was focused on the detection of carriers in the hospital personnel. Three employees were found to be carriers. All of these three stated that in their childhood they had diphtheria and they had been treated with diphtheria antitoxin. To avoid possibility of allergic reaction to the antitoxin these employees were treated only with Procaine Penicillin, 600,000 units, b.i.d., I.M. given here in the hospital. Since these employees lived alone it was no problem for them to remain alone while being treated.

Three other employees were suspected to be carriers because the Fluorescent Antibody Technique tests were positive. Fortunately, cultures were reported negative in all these three cases.

Special policy was established to isolate and take cultures from any patient who was planning on leaving the hospital. Because of this review, two carriers were found who were treated with Penicillin and were later discharged to the community.

Summary

An outbreak of diphtheria occurred in a state hospital from March 23, 1964, to August, 1964. Seventy-nine clinical cases of diphtheria and 25 carriers were found during this period of time. Attempts to find out how the disease was introduced to the hospital and how the disease was transmitted from the first to the second case failed completely regardless of the efforts of an epidemiologist from the Communicable Disease Center of Atlanta, Georgia.

Thirty-eight patients were treated with diphtheria antitoxin, 80 000 units and Aqueous Penicillin, 500,000 units every four hours for a period of 14 days. From this group one (the second case) died a few hours after diphtheria antitoxin was given. She was considered to have received an inadequate amount of Penicillin.

Forty patients and 25 carriers were treated with Procaine Penicillin, Aqueous Penicillin and Erythromycin without receiving tetanus and diphtheria antitoxin since they already had received three injections of tetanus toxoid. From this group nine patients who were treated with Procaine Penicillin failed to improve and they needed a second treatment with Aqueous Penicillin.

Except for the two original cases who died as the result of diphtheria and one patient who did not have diphtheria but died on the isolation unit a few hours after his admission, the rest of the patients recovered.

It was found best to survey the hospital population by taking nose and throat cultures. In the beginning nose and throat cultures were sent to the state laboratory in which place Fluorescent Antibody Technique tests were done and if these tests were reported as positive, cultures and toxigenicity tests followed.

In the first 27 cases, Fluorescent Antibody Technique results correlated with positive cultures and toxigenicity. However, at the end of May and June 101 cases which were positive by the Fluorescent Antibody Technique were followed by routine cultures and it was found that 62 were positive and 39 were negative. In view of this 39% failure it was decided to stop completely the screening procedure by the Fluorescent Antibody Technique and to use the Tinsdale medium instead. All remaining cases which were positive in the Tinsdale plate were also positive in culture and toxigenicity.

Thirty-eight patients who were treated with diphtheria antitoxin developed serious allergic reaction a few days later and they were treated with costicosteroids. All of them recovered without the necessity of tracheotomies.

Footnote

It is interesting to note that this diphtheria epidemic developed in the Augusta State Hospital immediately after the formation for the first time of a separate Medical and Surgical Service. Three weeks after the official inception of this service the first diphtheria death occurred.

This was an acute and fulminating situation and one that disrupted the fundamental basis of the hospital program – the treatment of the psychiatric patient. It was very disturbing to patients and personnel alike and particularly so to the personnel less directly involved in general patient care.

A great deal of tribute must be paid to the hospital personnel involved. They were given every possible support and advice by our State Bureau of Mental Health and our State Bureau of Health, with their parent

Continued on Page 184

Localized Nodular Tenosynovitis With Involvement of Bone

JAMES C. HAYES, M.D. AND ALLAN J. STINCHFIELD, M.D.

This case is presented because it is of some interest as a problem in clinical and radiological diagnosis and because it provides another example of invasion of bone by localized nodular tenosynovitis. (So called giant-cell tumor of tendon sheath.)

CASE REPORT

Clinical findings: When first seen in December 1966, the patient, an 18-year-old female, complained of a lump on the left fourth finger which she had first noted about one year previously. During this time, she had not noted much change in size and the lesion had not been painful. Examination revealed a soft tissue mass 1.5 x 1.5 x 1 cm. in size just proximal to the distal interphalangeal joint on the flexor surface of the left fourth finger. It was moderately tender to heavy pressure. It was not fixed to the skin but seemed to be loosely attached to deep structures distally. It did not move with flexion or extension of the finger. There was no discoloration of the overlying skin or any sign of inflammation.

Three months later the patient noted enlargement of the mass and increasing tenderness. Aching pain ensued when it was touched and it seemed more painful during bad weather. Again no signs of inflammation were present. The tumor felt firm rather than bony, hard and solid rather than cystic.

On clinical grounds, the solid feel of the mass tended to rule out ganglion cyst which is the most common tumor in this part of the finger. Both firmness and lack of skin discoloration helped exclude hemangioma as well. Solid tumors in this location are most likely to be localized nodular tenosynovitis.

X-ray examination was done and, as shown in Figs. 1 and 2, involvement of both bone and soft tissue were noted. This raised the question of a malignant soft tissue tumor invading bone or of a primary bone tumor invading soft tissue. The latter possibility seemed unlikely in the absence of expansion of the bony cortex and because of the clean punched out appearance of the lesion. When soft tissue lesions are considered fibrosarcoma and liposarcoma cannot be excluded on



Fig. 1



Fig. 2

Figs. 1 and 2. There is a lobular soft tissue lesion composed of at least two parts on the ventral and lateral aspect of the left ring finger in intimate contact with the ventral cortex of the middle phalanx. The ventral cortex is dorsally bowed, eroded and apparently yielding over the entire length of the shaft to the soft tissue lesion. There is also a slight dorsal bow to a thickened dorsal cortex. Only a very narrow almost obliterated medullary canal is present in the mid portion of the phalanx. In the ventral head of the middle phalanx there is a break in the cortex.

IMPRESSION: The appearance is characteristic of an extrinsic soft tissue lesion of long standing duration causing bone change because of pressure and contiguity. The chronic change and little change in appearance over a long period of time indicates a benign process.

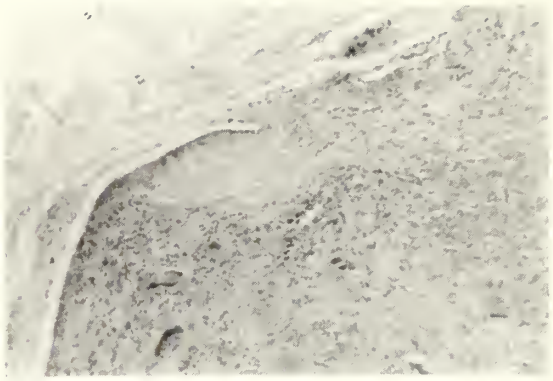


Fig. 3. Tissue clefts on left and upper right. Note giant cells and hyaline fibrous matrix.

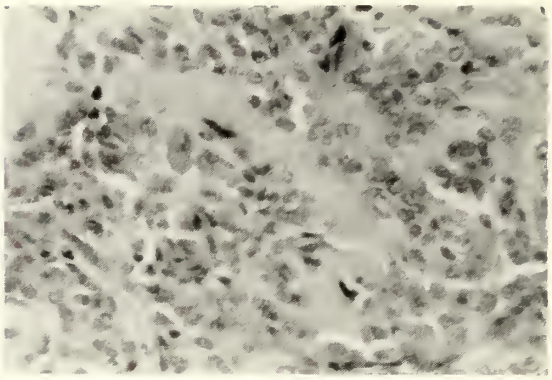


Fig. 4. Predominant cells and fibrous matrix.

the basis of x-ray findings alone but would be unusual in a patient of this age. Liposarcoma is rare in this location. The lack of focal radio-opacity in the soft tissue component helps exclude chondrosarcoma and hemangioma. Granular cell myoblastoma, rhabdomyosarcoma and leiomyosarcoma are other soft tissue tumors which have been reported with invasion of bone.

Operation was performed on April 25th, 1967. An incision was made on the radial side of the finger. The digital nerve was exposed and retracted anteriorly revealing a smooth slightly lobulated encapsulated mass 1.2 x 1.2 x 0.7 cms. It was quite firm and had a yellowish color. It was not attached to either tendon or tendon sheath but was attached distally to a deeper structure. Further exposure revealed that the original tumor was part of a U shaped mass with the other limit of the U formed by a mass of similar consistency which could be easily shelled-out from the shaft of the phalanx. A longitudinal groove in the bone remained after this part of the tumor was removed. The base of the U was attached near the distal end of the phalanx and the tumor penetrated into the bone at this point.

Pathology: The gross specimen consisted of two nodular pieces of firm tissue with smooth surfaces. One was 1.4 cms. in length and 1.1 cms. in greatest diameter, the other was 1.3 cms. long and 0.5 cms. in maximum width. Cross sections revealed a firm gray matrix in which many small orange-yellow areas were seen.

Microscopically the tumor was sharply circumscribed and had a partial delicate fibrous capsule. Under the scanning lens, it was seen to have a partially lobulated configuration with some lobules separated partially by cleft-like spaces. The predominant cell in the tumor was of intermediate size with faintly eosinophilic cytoplasm and ill-defined cell borders. The cytoplasm often showed fine vacuolization. The nuclei were relatively large with a fine, open chromatin pattern and usually a single small centrally-placed nucleolus. Scattered through the tumor were multinucleated giant cells with nuclei similar to those seen in the predominant cell. Abundant fibrous tissue showing extensive hyalinization formed the background in which these cells were found. Brown pigment was found in small amounts at several points within the tumor and occasional clusters of histiocytes with foamy cytoplasm were present. A diagnosis of localized nodular tenosynovitis with invasion of bone was made.

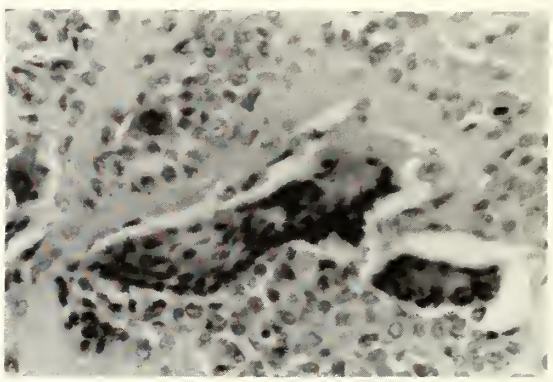


Fig. 5. Giant cells. Nuclei were not as hyperchromatic in most of the giant cells seen.

Comment: Current opinion is that this tumor is not a true neoplasm but that it is a proliferative inflammatory reaction closely related to pigmented villonodular synovitis, bursitis and tenosynovitis. The tissue clefts and spaces in these tumors are thought to result from a coalescence of adjacent proliferating villous projections which cohere to form a nodular mass as they grow. In view of the site of origin and pathogenesis of this lesion the previously accepted designation, "Giant cell tumor of tendon sheath" is being discarded because of its somewhat misleading connotations and purely descriptive nature. The incidence of bone invasion by this lesion is low but is sufficiently frequent to make it a worthwhile diagnostic consideration in cases presenting with combined involvement of bone and soft tissue by a tumorous growth.

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Dr. Stinchfield, Box 343, Augusta, Maine 04330

A Community Work Study Program

FRANCIS J. O'CONNOR, M.D.*

It is well to have scholarship and student loan programs for medical and nurse students, but it should be possible for any Maine youth from even the lowest economic stratum to attain the level of academic achievement to be admitted to a medical school, nursing school or paramedical university training.

The poor but bright Maine youth has always had the disadvantage of not being able to see the way as well financially to achieve higher education as compared to his counterpart in the big city. Distance and the cost of living away from home appear as insurmountable obstacles.

The following description of a community work study program outlines the evolution of a university aide program applied to southern Kennebec County which provides the opportunity for bright but needy youth to help finance their education with meaningful employment and to serve their community as well.

In August 1964 the Economic Opportunity Act became law. Part of Title I of this law is entitled Work Study program and is intended to provide for the part-time employment of students in colleges and universities who are from low-income families and who are in need of the earnings of such employment to begin or continue their education. The Federal Government provides grants directly to colleges and universities. The university may provide a program for part-time employment at the university or in a community for a public or private nonprofit organization when the position is obtained through on agreement (contract) between the institution and such organization. In the latter case, work should be related to the students' educational objectives.

The Work Study Program was removed from the Economic Opportunity Act and placed under the United States Office of Education as a result of the Higher Education Act of 1965.

A committee of the Augusta Rotary Club in the fall and winter of 1964 wanted to provide employment for needy youth at the high school and college level in the development of the Augusta Nature Education Center, a conservation education project aimed at providing 97 acres of natural Augusta to be used for natural science, conservation study, education and also for the pure pleasure and enjoyment of all the Augusta region citizens.

As the program evolved the efforts proved to be more far reaching and of over all greater community service to Augusta and the entire surrounding countryside.

In the spring of 1965 seven job descriptions for work in the Augusta-Hallowell area were sent to the University of Maine, Orono. An attempt to seek out needy students who had the academic ability but no financial ability was made. The University of Maine agreed despite overcrowding to accept these students. It was an interesting experience to obtain names of students in the regional high schools who satisfied the necessary criteria. It would seem to be a delightful opportunity to be able to come into the life of a young high school senior who had no chance of going on to college because there was not the financial where-with-all and presenting a plan to such a student by which he could get his education with grants in aid from the University matched with Federal Government grants and in addition the opportunity to be able to have good employment in the community to further help financially. The chore was in fact frustrating. It became clear that a senior high school student even with exceptional academic capability may have never been able to see higher education on his horizon, especially if his parents have never described or urged the need of college as a goal.

We were successful at least in this pilot project in having five students accepted as freshmen at the University of Maine and for one student to continue into his junior year.

It was necessary to obtain from nonprofit employers 14.2% of the salary to make up the matching funds for the university. Besides the required 10% cash, social security, workman's compensation and liability insurance was also needed. In this pilot project it was learned that although the concept of community employment for college students as opposed to campus employment was actually more practical, meaningful and generally more productive in the summer both for the student and the community; it was a great waste of time to teach many nonprofit employers the mechanism of contracting with the university, and taking care of other bookkeeping problems.

The simple solution lay in having all job descriptions come through the Augusta-Gardiner Area Community Council as a sponsor contracting with the University of Maine or any college or university and agreeing to pay the necessary matching funds. All the necessary secretarial work being done by the Area Council and with assistance of such student records etc., actually taken care of by a university student secretary working in the Area Council office.

*Radiologist, Augusta General Hospital and Chairman, Mayor's Committee, Augusta, Maine 04330

A policy was adopted that any student who was eligible would not be turned down however late he applied and no matter what his college. Colleges were contacted, urged, persuaded, and even pressured in some individual cases into accepting local students in their Work Study program thus allowing the student to work in his own community and to be paid by the university through the Area Council.

The first students employed in the community in 1965 served in recreation, in an art gallery, and as trainee botanists at the Augusta Nature Education Center a Rotary and Nature Club Community project.

In the spring of 1966 it was a great experience to visit the campus of the University of Maine to interview students looking for community summer work and attempt to place them in positions for which they seemed best suited. Many were actually not quite sure that such an opportunity was real. For many their education to date was on the basis of tremendous effort financially, usually with less meaningful employment.

During the summer of 1966 and especially because of the efforts of the Community Action Program Director, Larry LaPointe, there was a completely successful community Work Study Program. There were 73 university students from seven different schools both in and out of the state. They were employed in over 20 different types of work for 20 different public or private nonprofit employers. They worked 32,141 hours and earned $61,027 toward their college expense.

Only two students proved to be unsatisfactory to their employers and both resigned their positions.

Inexpensive housing was arranged by the Augusta Rotary Club and through the generosity of Richard Shenk of the Augusta House.

The students were from the University of Maine, Gorham State, Springfield (Massachusetts), Colby College, Washington State Teachers College, Boston College and Boston University.

The following types of jobs were available to the students: Recreation Assistants, Dietician Assistants, Highway Department Aide, Tumor Clinic Secretary, Assistant Janitorial Aide, Nurse Assistant, Medical Assistant, Psychiatric Aide, Playground Supervisor, Basketball Coach Trainees, Swimming Supervisor, Assessor's Assistant, Nature Trail Guides, Tennis Instructors, Art Gallery Secretary, Assistant Librarian, Information Clerk, State House Departmental Aides, Engineering Aide.

These positions were new jobs and did not take work from anyone. In fact these positions had the effect of opening job opportunities for other students who may have wanted work in the region but did not satisfy the criteria of the University Aide Office.

The public and private nonprofit employers included: the Augusta General Hospital, Stevens Training Center, Winthrop Area Development, Winthrop District Schools (Manchester and Readfield), the Augusta State Hospital, Hallowell Youth Development, City of Augusta Assessors Office, the Augusta Nature Club, City of Gardiner, Gardiner Recreation, Pittston Parent and Teachers Club, Kennebec Valley Art Association, Augusta Chamber of Commerce, Hayford Heights Recreation, Farmingdale, Maine, State House, Vocational Rehabilitation and the town of Randolph.

The Area Council was required to provide in cash $9,030 which included the matching 10% plus 14.2% for social security, workman's compensation and liability insurance. These funds were received from employers and generous contributors sponsoring deserving needy youth including; Depositors Trust Company, the Samuel & Ester Lipman Foundation, the Augusta Saving and Loan Association, the Augusta Rotary Club and the Oblate Retreat House of Augusta.

Because the student is paid by the University through the Area Council and not by the employing agency there has been very little problem with wage scale comparison with other workers.

There continues to be a need for donated funds to the project. It is hoped that the many employers will be able to pay the necessary matching funds. After August 20, 1967 the law indicated that Federal funds must be matching 25% by the university and thus the community.

To date there has been no need for administrative costs of this program since the secretarial help and bookkeeping has been at the Area Council office through the Community Action Program. There will continue to be such service during 1967 and probably 1968.

The Community Work Study program is so meaningful to so many bright but needy youth and to the Community that is served in so many ways that it should continue indefinitely as long as matching Federal funds are available and consideration should be given to its perpetual sponsorship by the Area Council probably insured by Community Chest aid.

At the time of submitting this paper there are to be at least forty (40) university students employed in the greater Augusta region. These students are from eight different universities.

There has been a reduction in the available Federal funds for this program for this summer and in some instances funds are not being made available to entering Freshman which will pose a problem for this level this year.

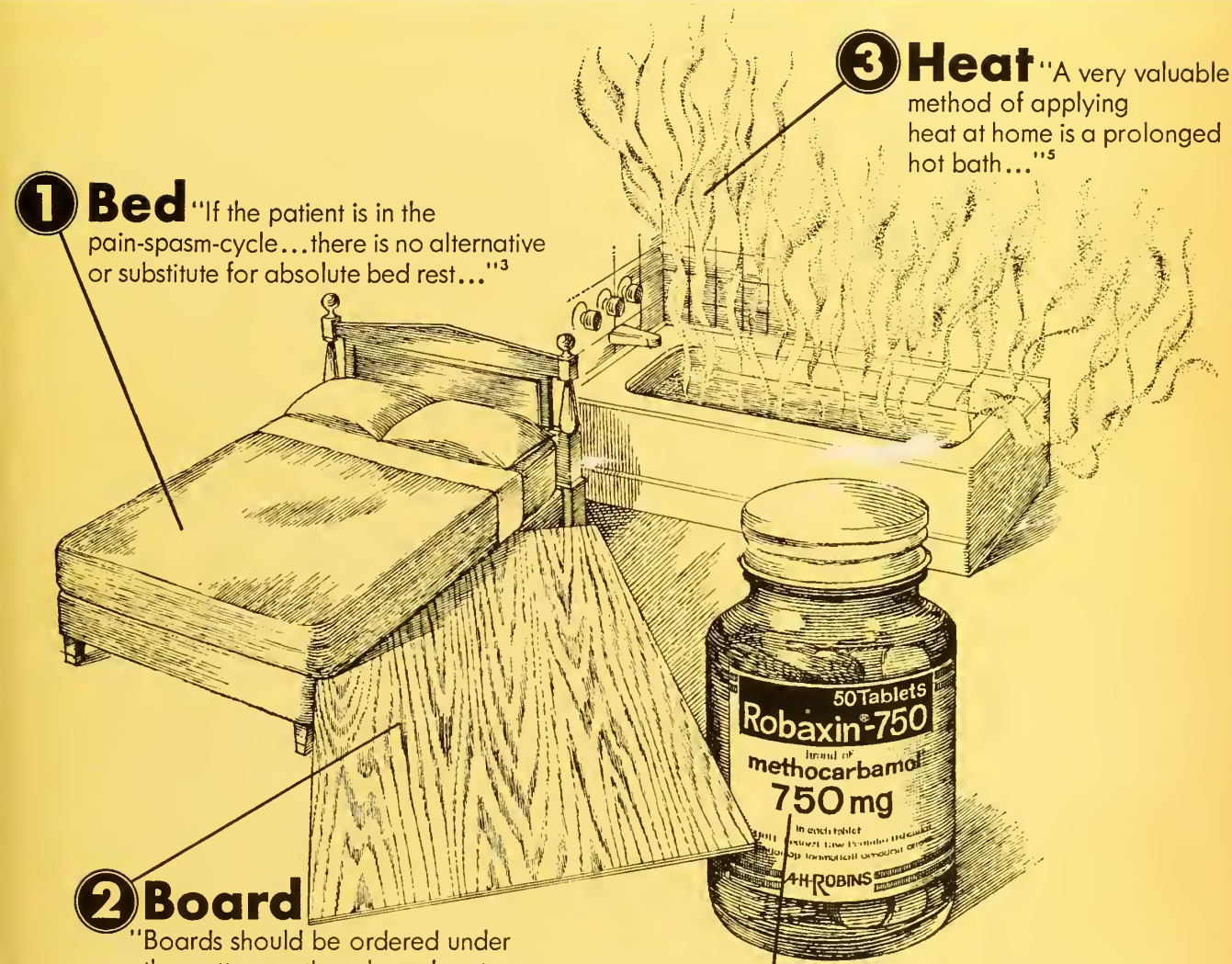
Summary

The Community Work Study Program here described is easily duplicated by any community. The amount of paper work is minimal requiring only job descriptions for the universities as suggested in this article and a university contract with a local sponsoring agency such as a Community-Council, or directly with a hospital. Job descriptions in many different health careers may be submitted. The Community hospital is helped and bright needy Maine youths are given employment related to their educational objectives.

LOW-BACK PAIN

A CONSERVATIVE, FOUR-POINT PROGRAM

The low back pain that is most frequently seen in general practice is mechanical in nature, i.e., postural back pain, joint dysfunction and acute back strain.[1,2] For this type of discomfort, a conservative regimen is usually sufficient to relieve aches and pains, and to help keep the patient functioning. Components of this basic program include:



1 Bed "If the patient is in the pain-spasm-cycle...there is no alternative or substitute for absolute bed rest..."[3]

2 Board "Boards should be ordered under the mattress...these boards act by immobilizing the spine..."[4]

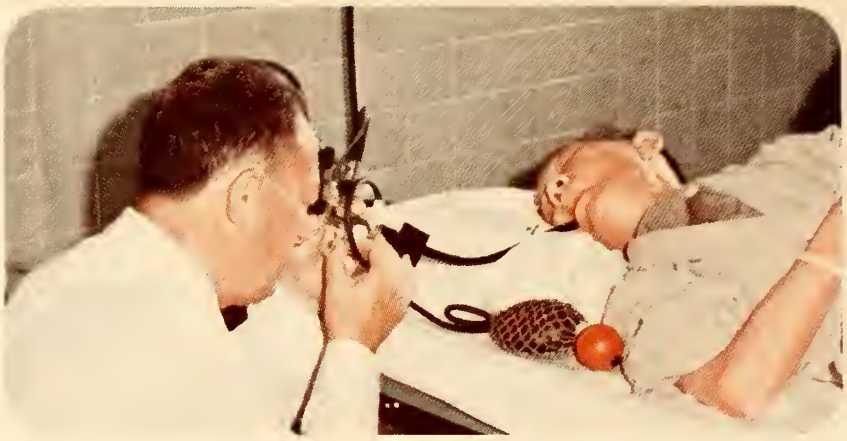
3 Heat "A very valuable method of applying heat at home is a prolonged hot bath..."[5]

4 Robaxin®-750 (methocarbamol, 750 mg. capsule-shaped tablets) A well-tolerated[6] skeletal muscle relaxant, methocarbamol helps relieve spasm "...without interfering with normal tone and movement."[7] And there is little likelihood of sedation.[6]

Indicated for relief of skeletal muscle sposm. **Contraindicated in** hypersensitive potients. **Side Effects** (lightheadedness, dizziness, drowsiness, nauseo) moy occur rorely, but usuolly disoppear on reduced dosage. Hypersensitivity reactians develop infrequently. See product literoture for further details. **Also available:** Roboxin® Toblets (methocorbomol, 500 mg.) Roboxin Injectoble (methocorbomol, 1 Gm./10 cc.)

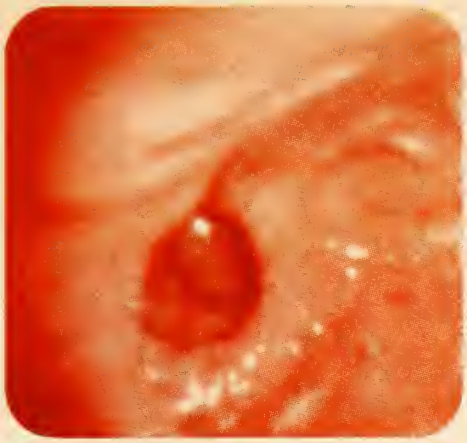
References: (1). Godfrey, C.M.: Applied Therop. 8:950, 1966. (2). Gattschalk, L.A.: GP 33:91, 1966. (3). Rowe, M.L.: J. Occup. Med. 2:219, 1960. (4). Cozen, L.: South Dakoto J. Med. 18:26, 1965. (5). Sata-Hall, R.: Med. Sc. 14:23, 1963. (6). Weiss, M. and Weiss, S.: J. Am. Osteopath. A. 62:142, 1962. (7). Feuer, S.G., *et al.*: New York J. Med. 62:1985, 1962.

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NEW EVIDENCE:

Pro-Banthīne® (propantheline bromide)
gives positive, selective benefits in gastrointestinal disorders.



Intragastric photograph of pyloric region showing complete relaxation of pyloric sphincter with 6 mg. of Pro-Banthīne intravenously.

AN IMPORTANT PROBLEM in managing gastrointestinal disorders has been the choice of an anticholinergic agent which will act positively and selectively on the gastrointestinal tract without extensive secondary effects.

Recent direct observations with the cinefibergastroscope and intragastric photography[1] visually confirm previous evidence that Pro-Banthīne does, indeed, possess such selective activity.

Barowsky and his associates demonstrated that a minimal dose of 6 to 8 mg. of Pro-Banthīne intravenously produced complete relaxation of gastric activity. Secondary effects were not significant.

By contrast, it required 0.8 mg. or double the usual dose of atropine intravenously to achieve similar gastric relaxation. Side effects of this dosage of the belladonna alkaloid were pronounced. Ventricular rates were as high as 150 per minute.

For positive, selective anticholinergic benefits Pro-Banthīne is indicated in patients with peptic ulcer, gastritis, irritable colon and other forms of gastrointestinal hypermotility.

Dosage: The maximal tolerated dosage is usually the most effective. For most *adult* patients this will be four to six 15-mg. tablets daily in divided doses. In severe conditions as many as two tablets four to six times daily may be required. Pro-Banthīne (brand of propantheline bromide) is supplied as tablets of 15 mg., as prolonged-acting tablets of 30 mg. and, for parenteral use, as serum-type ampuls of 30 mg. The parenteral dose should be adjusted to the patient's requirement and may be up to 30 mg. or more every six hours, intramuscularly or intravenously.

Contraindications: In glaucoma or severe cardiac disease.

Precautions: Since varying degrees of urinary hesitancy may occur in the elderly male with prostatic hypertrophy, this should be watched for in such patients until they have gained some experience with the drug.

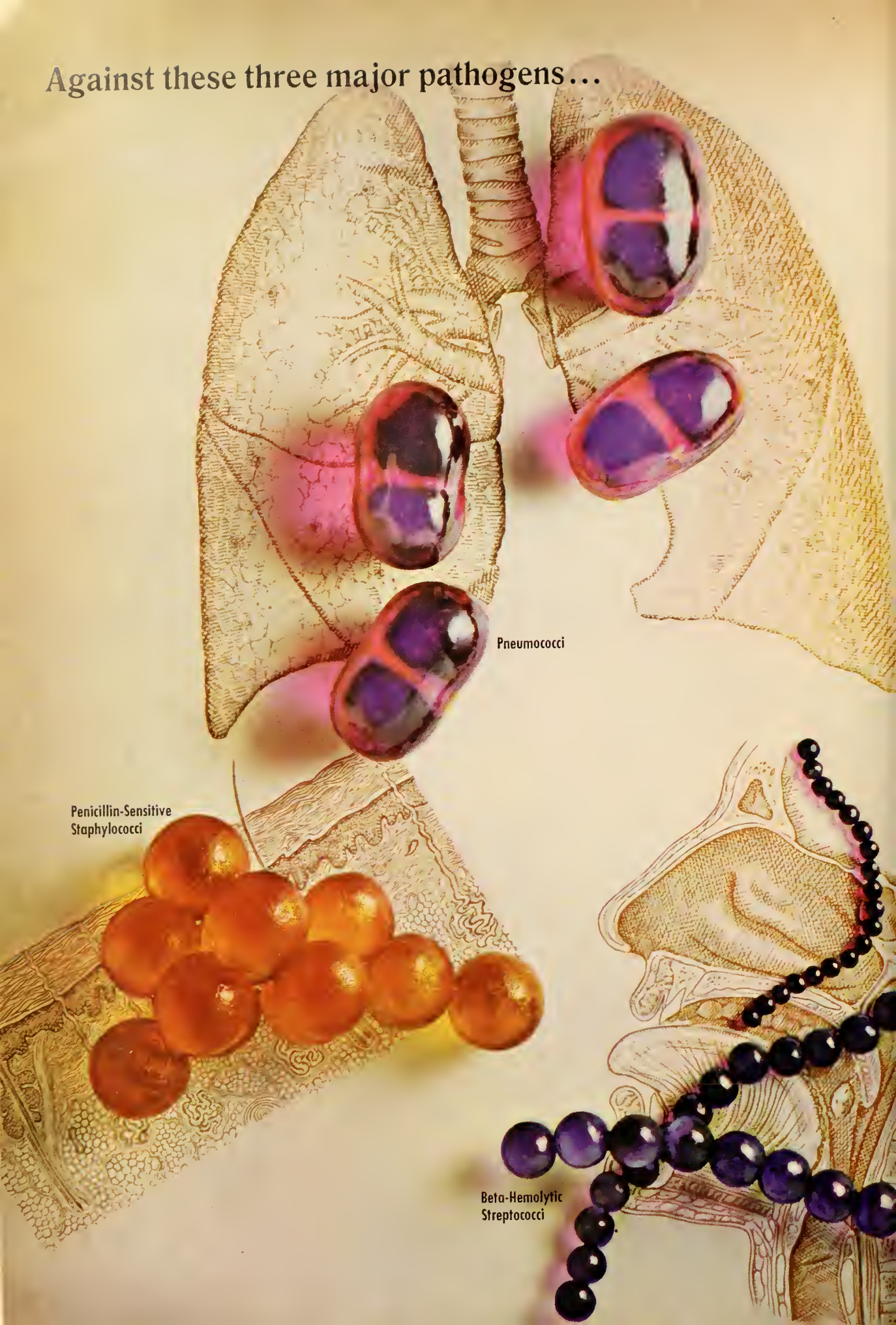
Although never reported, theoretically a curare-like action may occur with possible loss of voluntary muscle control. Such patients should receive prompt and continuing artificial respiration until the drug effect has been exhausted.

Side Effects The more common side effects, in order of incidence, are xerostomia, mydriasis, hesitancy of urination and gastric fullness.

1. Barowsky, H.; Greene, L.; Bennett, R., and Buganza, G.: The Effect of Anticholinergic Drugs on Gastric Motility and Pyloric Function, Scientific Exhibit, Annual Convention of the American Medical Association, Chicago, Illinois, June 26-30, 1966.

SEARLE *Research in the Service of Medicine*

Against these three major pathogens...



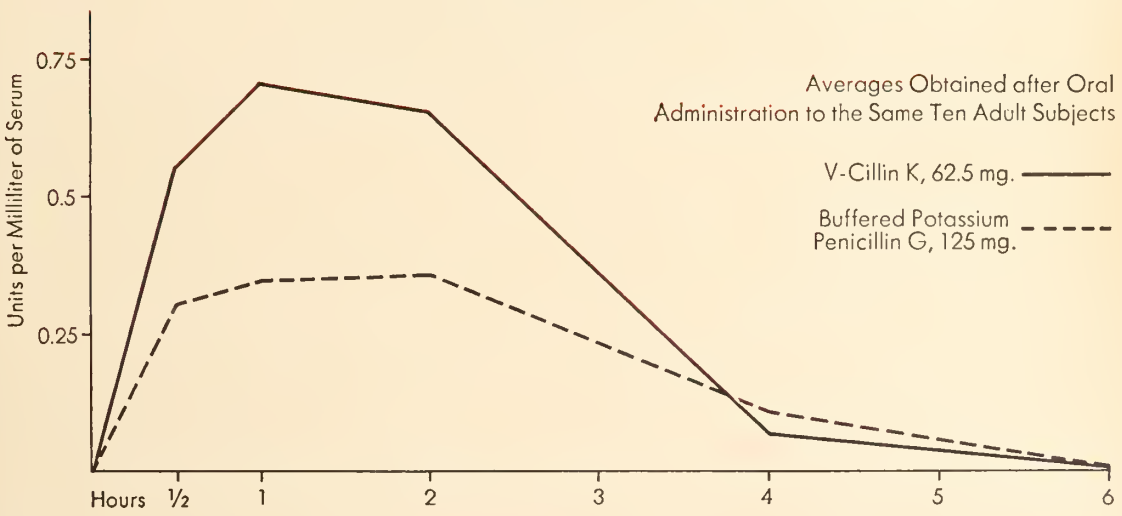
V-Cillin K® provides dependable oral antibacterial activity

because it combines a high degree of in-vitro activity...

Antibiotic	Staph. Aureus (Penicillin-Sensitive) MIC (mcg./ml.) Median	Range	Streptococcus, Group A MIC (mcg./ml.) Median	Range	Diplococcus Pneumoniae MIC (mcg./ml.) Median	Range
Penicillin V	0.02	0.02-0.04	0.02	0.003-0.4	0.01	0.005-0.2
Penicillin G	0.02	0.005-1.6	0.005	0.002-0.2	0.02	0.01-0.1
Methicillin	1.6	0.4-6.3	0.2	0.1-0.4	0.2	0.1-1.6
Oxacillin	0.4	0.1-3.1	0.04	0.02-0.4	0.1	0.04-0.8
Cloxacillin	0.2	0.2-0.8	0.1	0.1-0.8	—	—
Nafcillin	0.4	0.2-0.8	0.04	0.02-0.1	0.02	0.02-0.2
Ampicillin	0.2	0.1-0.8	0.02	0.01-0.04	0.02	0.01-0.04

Adapted from Klein, J. O., and Finland, M.: New England J. Med ,269:1019, 1963.

with high blood levels, even in the presence of food



Adopted from Griffith, R. S., and Black, H. R.: Current Ther. Res., 6 253, 1964.

V-Cillin K® Lilly 700867

Potassium Phenoxymethyl Penicillin

(See next page for prescribing informati

New 500 mg. tablets...a more convenient way to give high doses



Description: V-Cillin K is the potassium salt of V-Cillin® (phenoxymethyl penicillin, Lilly). This chemically improved form combines acid stability with immediate solubility and rapid absorption. Higher serum levels are obtained more rapidly with this penicillin than with equal oral doses of penicillin G. The higher serum levels and acid stability of V-Cillin K make it a more dependable penicillin for oral use.

V-Cillin K, Pediatric, is an oral solution of clinically proved V-Cillin K in teaspoon dosage form. When mixed as directed, each 5 cc. (approximately one teaspoonful) will contain 125 mg. (200,000 units) phenoxymethyl penicillin as the potassium salt.

Indications: V-Cillin K has been shown to be effective in the treatment of streptococcus, pneumococcus, and gonococcus infections as well as infections caused by sensitive strains of staphylococci. It may be used for the prophylaxis of streptococcus infections in patients with a history of rheumatic fever and for the prevention of bacterial endocarditis after tonsillectomy and tooth extraction in those patients with a history of rheumatic fever or congenital heart disease.

Contraindication: V-Cillin K should not be administered to a patient with a history of penicillin hypersensitivity.

Warnings: In rare instances, the use of penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin and in those with bronchial asthma or other allergies. Resuscitative drugs should be readily available for emergency administration. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for relief of immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: V-Cillin K should be used cautiously, if at all, in a patient with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with high parenteral dosage schedules, frequent evaluation of the renal and hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory studies (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth of pencillin-insensitive organisms. In such cases, its administration should be discontinued, and appropriate measures should be taken.

Adverse Reactions: Although serious allergic reactions are much less common with administration of oral penicillin than with intramuscular forms, manifestations of penicillin allergy may occur.

Penicillin is a substance of low toxicity, but it does possess a significant index of sensitization. The following hypersensitivity reactians associated with the use of penicillin have been reported: skin rashes ranging from maculopapular eruptions to exfoliative dermatitis; urticaria; and reactions resembling serum sickness, including chills, fever, edema, arthralgia, and prostration. Severe and often fatal anaphylaxis has occurred (see Warnings). Hemolytic anemia, leukopenia, thrambocytopenia, and nephropathy are rarely observed side-effects and are usually associated with high parenteral dosage.

Administration and Dosage: For Tablets V-Cillin K and for V-Cillin K, Pediatric, the usual dosage ranges from 125 mg. (200,000 units) three times a day to 500 mg. (800,000 units) every four hours. For infants, the daily dosage may be 50 mg. per Kg. of body weight divided into three doses.

Beta-hemolytic streptococcus infections without associated bacteremia may be treated with 200,000 to 400,0000 units three times a day. Therapy should be continued for a minimum of ten days to prevent development of rheumatic fever and/or other serious complicatians. Dosage for routine streptococcus prophylaxis in patients with a histary of rheumatic fever or congenital heart disease may be 200,000 units once or twice daily. When such patients undergo tonsillectomy, tooth extraction, or other minor surgery, the prophylactic dose should be 500,000 units every six hours given two days prior to surgery and for two days postoperatively. If oral medication is not feasible on the day of surgery, parenteral therapy should be considered. Mild to moderately severe pneumococcus pneumonia has been treated effectively with 250 mg. every six hours.

In staphylococcus infections, 400,000 units or more should be given every six to eight hours in conjunction with indicated surgical pracedures.

For gonorrhea in males, 500 mg. (800,000 units) every four hours far three doses may be employed; in females, 500 mg. every four hours for six doses are recommended. Refractory infections generally respand to a second treatment three to four days following completion of the first. Treatment of gonorrhea with severe complications should be individualized, with prolonged and intensive treatment. Patients with a suspected lesion of syphilis should have a dark-field examination before receiving penicillin and monthly serologic tests for a minimum af three months.

How Supplied: Tablets V-Cillin K, U.S.P., 125 mg. (200,000 units), in bottles of 50 and 100; and 250 mg. (400,0000 units) and 500 mg. (800,000 units), in bottles of 24 and 100.

V-Cillin K, Pediatric, for Oral Solution, 125 mg. (200,000 units) per 5 cc. of solution, in 40, 80, and 150-cc.-size packages. [032067]

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis, Indiana 46206.

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President

Maine Medical Association

1967 - 1968



Paul S. Hill, Jr., M.D.

Paul S. Hill, Jr., M.D. of Saco, Maine assumed his duties as President of the Maine Medical Association at the 114th Annual Session banquet on June 12, 1967. Dr. Hill served as Councilor for the First District from 1963 to 1966, the last year as Council Chairman and as President-elect from 1966 to 1967. He served as a member of the Investment Committee for many years and as Chairman since 1959.

Dr. Hill was born in Saco, Maine on September 23, 1906, the son of Dr. Paul S. and Catherine M. Hill. He was graduated from Thornton Academy in 1923, Bowdoin College in 1927 and received his medical degree from The Johns Hopkins Medical School in 1931. He interned at the Johns Hopkins Hospital from 1931 to 1932 and The New York Hospital-Cornell Medical Center from 1932 to 1933. Dr. Hill served in the U.S. Army Medical Corps as Lt. Col. from 1942 to 1946.

Dr. Hill is a member of the York County Medical Society, the Maine Medical Association and the American Medical Association. He is also a member of the board of directors of the American Cancer Society, Maine Division, Inc., a member of the Maine Medical Advisory Committee, board member of the Sweetser-Children's Home, vice president, board of trustees of Thornton Academy, director of the York Institute, trustee of the Lucia Kimball Deering Hospital Fund and has served as chief of staff at the Webber Hospital since 1950.

Dr. Hill is married to the former Clare M. Matthews, of Louisville, Kentucky.

Elected at the 114th Annual Session of the Maine Medical Association

Rockland, Maine June 11, 12, 13, 1967

President-Elect
ASA C. ADAMS, M.D., Orono

Councilor, Fifth District
ROBERT F. RUSSELL, M.D., PENOBSCOT

Councilor, Sixth District
LINUS J. STITHAM, M.D., Dover-Foxcroft

Council Chairman
CHARLES F. BRANCH, M.D., Lewiston



DR. ADAMS



DR. STITHAM



DR. BRANCH

From the Secretary's Notebook

114th Annual Session of the M.M.A. House of Delegates

The 114th annual session of the M.M.A. House of Delegates was held at The Samoset, Rockland, Maine on Sunday, June 11, 1967 with an attendance of sixty-one delegates and alternates and twenty-three guests. Paul S. Hill, Jr., M.D., President-elect of the M.M.A., called to order the meetings of the House, which were presided over by Robinson L. Bidwell, M.D., Speaker of the House.

Election of Speaker and Vice Speaker of the House of Delegates Meetings to be Held in 1968 – Robinson L. Bidwell, M.D. of Portland was elected Speaker of the House of Delegates and Charles R. Glassmire, M.D., Vice Speaker of the House of Delegates.

Budget for 1968 – The proposed budget for fiscal year 1968 as presented at the Interim Meeting of the House of Delegates by John D. Denison, M.D., Chairman of the Budget Committee, and sent to each delegate and alternate following the Interim Meeting, was approved.

Nominating Committee – The report of the Nominating Committee, consisting of nominees for Standing Committees for 1967-1968, was accepted. This report is published elsewhere in this issue of *The Journal of the Maine Medical Association.*

Resolution submitted by the Hancock County Medical Society – This resolution, which follows, was submitted to a Reference Committee consisting of Drs. Carl E. Richards, Chairman, Linwood M. Rowe and Morris E. Goldman. The recommendation of this reference committee that the resolution be accepted was approved.

WHEREAS, the Maternal and Infant Care Program currently operating in Hancock and Washington counties is ill-conceived, ill-planned and overly expensive; and,

WHEREAS, although the program requests tax funds "to improve the quality, utilization, comprehensiveness and availability of medical and para-medical services related to pregnancy and the pre- and postnatal infant," there is no evidence to indicate that the presently available services are failing to meet the needs of the public; and,

WHEREAS, the program interferes with the practice of medicine, and the free choice of physician and hospital by the patient; and,

WHEREAS, the program compensates certain physicians and certain hospitals to the exclusion of others; and,

WHEREAS, the program fails to sufficiently integrate with and support existing public and private medical and para-medical services and people affected by the program; and,

WHEREAS, the program was formulated and put into effect without continued consultation with the physicians, para-medical services and people affected by the program; and,

WHEREAS, the program will lower physician incentive and reduce the patient's responsibility for his own welfare; and,

WHEREAS, the program would risk decreasing the efficiency and increasing the cost of medical care;

THEREFORE, BE IT RESOLVED, that the physicians of the Maine Medical Association go on record as opposed to the MATERNAL AND INFANT CARE PROGRAM and suggest that the State of Maine, Department of Health and Welfare discontinue the program and return allocated funds to the Children's Bureau, until such time as a satisfactory program is presented.

Medical-Legal Co-operation Agreement Between Maine State Bar Association and Maine Medical Association – Mr. John A. Platz, Chairman, Medical-Legal Affairs Committee, Maine State Bar Association, explained in detail the agreement, copy of which was included in the House of Delegate's folder. Following some discussion, it was voted to accept the agreement as presented. It was further voted that $250.00 be granted to the M.M.A. members of the Medical-Legal Co-operation Committee toward publication of the agreement, which will be sent to all members of the Maine Medical Association and the Maine State Bar Association when available. It is understood that a like amount will be forthcoming from the Maine State Bar Association. It is further understood that the Medical-Legal Co-operation Committee be empowered to modify this code from time to time, but only within the framework of the objectives as they are expressed.

Medical School for Maine Committee – Charles A. Hannigan, M.D., Chairman of this committee, whose complete report was in the House of Delegate's folder, stated that this committee feels the Medical School for Maine Committee "should be continued to insure a continuing interest in and desire for the development of a medical school when it becomes feasible." It was, however, voted that this committee be dissolved.

Special Committee on Sports Medicine – Russell M. Lane, M.D. of Orono proposed the appointment of a special committee on sports medicine which was approved. This committee as appointed by Paul S. Hill, Jr., M.D., President of the M.M.A., consists of the following members: Drs. Russell M. Lane, Chairman, Lawrence Crane, Clarence E. Dore, John J. Pearson, Daniel F. Hanley, Niles L. Perkins, Robert A. Graves, James D.

Clement, Jr., Donald H. Horsman, Channing H. Washburn and Stephen A. Cobb.

Maine Medical Education Foundation – It was voted that the contribution to the Maine Medical Education Foundation should be continued as an assessment as it is at present.

Malpractice Insurance Coverage Committee – John P. Dow, M.D., Chairman of this committee, stated that this is a new committee and urged the delegates to take back to their county societies these questions: one, have you read your mal-practice insurance policy; and two, are you satisfied with the coverage that you have under this policy that you are carrying and are you satisfied that this coverage that you now carry provides you with a true professional liability. He would like you to read your policies, and if you have any questions, please write to him (59 Main Street, Pittsfield, Maine 04967) so that he can bring your comments before the committee.

Federal Legislation Committee – The chairman of this committee (also a new committee), Carl E. Richards, M.D., stated that it would be to the advantage of the members of the Maine Medical Association to read the AMA News every week, and called attention to a recent issue on Federal Legislation on all levels. ". . . study it in case you want to write to Washington on any one of these particular items."

Regional Medical Programs – Merle S. Bacastow, M.D. called attention to the report in the House of Delegate's folder and the appointment of Manu Chatterjee, M.D. of Brunswick as program coordinator.

Election of Councilors – Robert F. Russell, M.D. of Castine was elected Councilor for the Fifth District (Hancock and Washington counties) and Linus J. Stitham, M.D. of Dover-Foxcroft for the Sixth District (Aroostook, Penobscot and Piscataquis counties). Both of these appointments are for a three-year term, expiring in 1970.

Annual Reports – Reports were submitted prior to the meeting by the following and included in the House of Delegate's folder:

Asa C. Adams, M.D., Councilor and Council Chairman; and Councilors, Charles R. Glassmire, M.D., Charles F. Branch, M.D., Edward K. Morse, M.D., John D. Denison, M.D. and James C. Bates, M.D.

Standing Committees: Legislative, Kevin Hill, M.D.; Public Relations, John R. Lincoln, M.D. and Rural Health, Sidney R. Branson, M.D.

Special Committees: Diabetes, Melvin Bacon, M.D.; Maternal and Child Welfare, Alice A. S. Whittier, M.D.; Mental Health, William E. Schumacher, M.D.; Conservation of Vision, Dexter J. Clough, 2nd, M.D.; To Conduct a Study of Maternal Mortality, Robert M. Knowles, M.D.; Cancer, Eugene P. McManamy, M.D.; Maine Committee – AMA-ERF, Charles R. Glassmire, M.D.; Rehabilitation, John J. Lorentz, M.D.; Medicine and Religion, Wedgwood P. Webber, M.D.; Disaster Medical Care, John T. Konecki, M.D.; Amy W. Pinkham Fund, Virginia C. Hamilton, M.D.; Liaison with Health Professions, George W. Bostwick, M.D.; Arthritis, Philip P. Thompson, Jr., M.D.; Liaison Activities Between the Maine State Nurses' Association and the M.M.A., Charles R. Glassmire, M.D.; Advisory Committee to the Accident Records System Study of the Maine State Highway Commission, John M. H. Barnard, M.D.; Advisory Committee to the Diabetes Detection Program of the Dept. of Health & Welfare, Melvin Bacon, M.D.; and Medical School for Maine, Charles A. Hannigan, M.D.

The report of the delegate to the Rhode Island Medical Society, Leonard G. Miragliuolo, M.D. and the report by the Secretary-Treasurer, Esther M. Kennard were also included in the Delegate's folder.

Reports were presented at the meeting by the Executive Director, Daniel F. Hanley, M.D.; Thomas A. Martin, M.D., Chairman, Medical Advisory; Francis A. Winchenbach, M.D., Chairman, Health Insurance; Paul H. Pfeiffer, M.D., Chairman, Recruitment, Aid and Placement; Kevin Hill, M.D., Chairman, Legislative; John F. Andrews, M.D., member, Problems of Long-Term Patient Care; Charles A. Hannigan, M.D., Chairman, Medical School for Maine; Carl E. Richards, M.D., Chairman, Federal Legislation; John P. Dow, M.D., Chairman, Malpractice Insurance Coverage, and Paul S. Hill, Jr., M.D., Investment.

Presentation of A. H. Robins Award – The Community Service Award for 1967, sponsored by the A. H. Robins Company, was presented to Johan Brouwer, M.D. of Camden by George E. Sullivan, M.D., M.M.A. President.

Election of Speaker and Vice Speaker of the House of Delegates – It was agreed that the election of the Speaker and Vice Speaker for the ensuing year be included in the agenda for the Second Meeting of the House of Delegates, following election of Councilors.

Special Memberships – The recommendations for special memberships were approved. (The list of members recommended for special memberships was included in the Delegate's folder.)

Guests – The guest list included Anthony M. Bonanno, M.D., delegate from New Hampshire Medical Society; Donald A. Nickerson, M.D., delegate from Massachusetts Medical Society; B. Albert Ring, M.D., delegate from Vermont State Medical Society; Payson B. Ayres, M.D., delegate from Connecticut State Medical Society; Thurman B. Givan, M.D., delegate from Medical Society of the State of New York; Mr. Maurice A. Kramer, AMA Field Representative; Mr. Chris D. Harding, Assistant Director, Health Insurance Council; Mr. Richard F. Nellson, Executive Director, Associated Hospital Service of Maine; Mr. Henry Paradis, Jr., A. H. Robins Company; Mr. John A. Platz, Chairman, Medical-Legal Affairs Committee, Maine State Bar Association; Mr. Edward M. Donelan from AMPAC; and M.M.A. members, Drs. Merle S. Bacastow, Johan Brouwer, Thomas A. Martin, Niles L. Perkins, Charles R. Geer, Francis

Continued on Page 185

Maine Medical Association

STANDING COMMITTEES — 1967-1968

Standing Committees for 1967-1968 as proposed by the Nominating Committee and approved at the Second Meeting of the House of Delegates of the Maine Medical Association at Rockland, Maine, June 11, 1967.

Nominating Committee

1st District – THOMAS ANTON, M.D., Biddeford
2nd District – PAUL A. BRINKMAN, M.D., Farmington
3rd District – GEORGE W. BOSTWICK, M.D. Newcastle
4th District – VALENTINE J. MOORE, M.D., Waterville
5th District – BRADLEY E. BROWNLOW, M.D., Blue Hill
6th District – CHARLES D. MCEVOY, JR., M.D., Bangor, *Chairman*

Scientific Committee

Waldo A. Clapp, M.D., 215 College St., Lewiston (1 yr.) – Chairman
Merle S. Bacastow, M.D., 22 Bramhall St., Portland (2 yrs.)
Harold D. Cross, M.D., Main Rd. & Summer St., Hampden Highlands (3 yrs.)

Legislative Committee

Kevin Hill, M.D., 33 College Ave., Waterville (2 yrs.) – Chairman
George O. Chase, M.D., Eastern Maine Gen. Hospital, Bangor (2 yrs.)
Henry A. Brann, M.D., 31 Western Ave., Augusta (1 yr.)
Brinton T. Darlington, M.D., Doctors Park, 89 Hospital St., Augusta (3 yrs.)
Paul A. Fichtner, M.D., 781 High St., Bath (3 yrs.)

Committee on Recruitment, Aid & Placement

Paul H. Pfeiffer, M.D., 14 Gilman St., Waterville (2 yrs.) – Chairman
Stanley B. Sylvester, M.D., 400 Congress St., Portland (2 yrs.)
Samuel L. Belknap, M.D., Damariscotta (1 yr.)
Stanley B. Covert, M.D., Kingfield (3 yrs.)
Ferris S. Ray, M.D., 7 Bramhall St., Portland (3 yrs.)

Medical Advisory Committee

Thomas A. Martin, M.D., 157 Pine St., Portland – Chairman
Gerald H. Donahue, M.D., 4 Station St., Presque Isle
Philip L. Gray, M.D., Blue Hill
C. Harold Jameson, M.D., Medical Arts Bldg., Rockland
George L. Maltby, M.D., 31 Bramhall St., Portland
Clement S. Dwyer, M.D., 205 French St., Bangor
Allan J. Stinchfield, M.D., P.O. Box 343, Augusta

Rural Health Committee

Sidney R. Branson, M.D., 37 Main St., So. Windham (1 yr.) – Chairman
Bradley E. Brownlow, M.D., Blue Hill Mem. Hospital, Blue Hill (1 yr.)
Wallace H. Duffy, M.D., 100 Main St., Farmington (2 yrs.)
Harland G. Turner, M.D., Box 38, Norridgewock (2 yrs.)
John B. Madigan, M.D., Houlton (3 yrs.)
Johan Brouwer, M.D., 5 Beech St., Rockland (3 yrs.)

Public Relations Committee

Ernest W. Stein, M.D., 72 Main St., Pittsfield (2 yrs.) – Chairman
Donald H. Horsman, M.D., 50 Goff St., Auburn (1 yr.)
Thomas A. Martin, M.D., 157 Pine St., Portland (1 yr.)
Leopold A. Viger, M.D., 10 Amherst St., Biddeford (3 yrs.)
Winston G. Stewart, M.D., 194 Main St., Bar Harbor (3 yrs.)

Board of Ethics and Discipline

Harry Brinkman, M.D., 47 Perham St., Farmington (3 yrs.) – Chairman
Earle M. Davis, M.D., 2 School St., Waterville (3 yrs.)
Stephen A. Cobb, M.D., 34 Winter St., Sanford (1 yr.)
George J. Harrison, M.D., Market Sq., Houlton (1 yr.)
Thomas A. Martin, M.D., 157 Pine St., Portland (2 yrs.)
Clement S. Dwyer, M.D., 205 French St., Bangor (2 yrs.)

Committee on Credentials

Ralph A. Goodwin, Sr., M.D., 56 Denison St., Auburn (1 yr.) – Chairman
Donald P. Cole, M.D., 45 Deering St., Portland (2 yrs.)
Allan Woodcock, M.D., 35 Second St., Bangor (2 yrs.)
Russell G. Williamson, M.D., Blue Hill Mem. Hospital, Blue Hill (3 yrs.)
Linus J. Stitham, M.D., 50 Main St., Dover-Foxcroft (3 yrs.)

Health Insurance Committee

Francis A. Winchenbach, M.D., 910 Washington St., Bath (3 yrs.) – (Lincoln-Sagadahoc) – Chairman
Charles W. Steele, M.D., 472 Main St., Lewiston (2 yrs.) – (Androscoggin)
Arthur D. Pendleton, M.D., 3 Green St., Ft. Fairfield (2 yrs.) – (Aroostook)
Albert Aranson, M.D., 39 Deering St., Portland (3 yrs.) – (Cumberland)
Gaetano T. Fiorica, M.D., 12 Church St., Chisholm (1 yr.) – (Franklin)
Robert F. Russell, M.D., Penobscot (2 yrs.) – (Hancock)
Kenneth W. Sewall, M.D., 2 School St., Waterville (2 yrs.) – (Kennebec)
Oram R. Lawry, Jr., M.D., 96 Limerock St., Rockland (2 yrs.) – (Knox)

Continued on Page 186

DEAN H. FISHER, M.D.
COMMISSIONER

State Of Maine

Department of Health and Welfare

Services for Aging Reports to You!

ROBERT A. FRATES*

In August, 1966, the State of Maine moved to concretely deal in a focused manner with the comprehensive social problems of senior citizens in the State. Within the Department of Health and Welfare, Division of Family Services, the Services for Aging Unit was established to concentrate on providing for the aged's needs by organizing a total range of alternative and diverse programs to complement the state's existing Old Age Assistance, Medical Assistance, health, leisure time, and other programs. While the Department recognized the necessity of coordinating and expanding many of the existing services, and extending their impact to reach every town and individual; in 1966-67 the Unit undertook to enrich two aspects of senior citizens' life – income and leisure time activities. The purpose of this article is to report to you what the Services for Aging Unit is and to seek your comments and suggestions about certain matters relating to senior citizens.

The need for recreational activities either through clubs, groups or centers, was apparent. A well documented study by the co-operative extension service of the University of Maine of York County in 1963 concluded: "The majority of the respondents stated that they had quite a bit of free time and did not have a group of friends. Forty-three percent did not belong to any clubs or organizations. A large majority of the respondents expressed an interest in a community center and 50% said they would use such a center." The Unit's objective became to develop recreational programs through drop-in centers or multi-purpose activity centers which would provide a place to meet with old friends, to make new friends, and to bring together people with various skills

*Services for Aging, Division of Family Services.

PROGRAMS OPERATING AS OF JULY 1, 1967 UNDER TITLE III OF THE 1965 OLDER AMERICANS ACT

Counties	Androscoggin	Aroostook	Cumberland	Franklin	Hancock	Kennebec	Somerset
Location of Centers	Auburn	Ashland Caribou Fort Fairfield Houlton Island Falls Portage Lake Presque Isle (2) -Central Aroostook Action Program -City Recreation Dept. Stockholm	Portland	NONE	Mt. Desert Island YMCA	Augusta Waterville (2) -YMCA -Water Street Winslow	Fairfield Madison Skowhegan
Total Budget	$10,626.	$36,721.	$35,973.		$6,530.	$49,174.* Augusta 2,675.	Amounts in Kenn
Local Matching	5,388.	18,543.	23,810.		3,750.	26,120. Augusta 1,675.	under Kenn
Fund	5,238.	18,178.	12,163.		2,780.	23,054. Augusta 1,000.	County -
Organization administering Program	City of Auburn Parks and Recreation 45 Spring Street Auburn, Maine	Central Aroostook Action Program Box 3 Presque Isle, Maine 04769	Salvation Army 297 Cumberland Avenue Portland, Maine		Hancock County Opportunity Council, Inc. Hancock County Courthouse Ellsworth, Maine	Augusta: Open Door St. Mark's Church 9 Summer Street, Augusta All Other Centers: Northern Kennebec Valley Community Action Council 60 Main St. Waterville, Me.	Northern K Valley Com Action Cou
Geographical area Served			Peninsula East of Forest Avenue			Augusta - Entire WCBB Reception area	

*Includes totals for Somerset County

and talents where these skills could be used to develop interests in other individuals. It was hoped an outcome of this might be the development of 1) volunteer services to promote friendly visiting for older people who were shut-in and could not move freely about the community, 2) telephone reassurance for those who live alone and were in some danger because of lack of friends, relatives or interested neighbors, and 3) transportation services by "younger" retired people between 65 and 70 who still had good physical ability and the means to operate their own automobiles. Recreation and leisure time projects and activities were not developed simply for the fun involved, but to have people with various interests and talents meet together in an organized fashion through groups, clubs or recreational activities.

The second aspect of senior citizen living that the Unit focused on was to augment the income of retired persons. Documentation of this particular concern was found in a study entitled "The Aged in the State of Maine" compiled by The Northeastern Research Foundation in August, 1960. It stated "the relatively low level of personal income in Maine is reflected in the income status of those individuals aged 65 and over. Also, at age 65 medium income of individuals in the state declined sharply. Old Age Survivors and Disability Insurance benefits are probably less effective in Maine than in the nation at large in maintaining a high level of living for the aged because of the relatively low past earnings of the beneficiaries. The percentage of Old Age Assistance recipients who also receive OASDI benefits is substantially higher in Maine than in the United States as a whole. The Old Age Assistance program in this State does not cover 100% of the need of the recipients of aid. It provides essentially a subsistence level of living and in all probability does not cover all who need aid.

"It is our impression that many retired people would like to work a few hours a week on a flat time basis if 1) they were able to find places that would hire them on this basis and 2) they could employ some skill and gain some satisfaction at the job as well as raise their level of income."

The first project initiated in Maine by the Bath YMCA involved the establishment of part-time employment opportunities for older people. All indications at this point are that the program was successful. It was a result of the expressed need of a significant group of retired individuals in the geographic area. Older people were in on the development phase of the program and continued to be involved in the administration of it.

The funds to support the establishment of multipurpose centers and other projects such as Bath's derive from two stable reservoirs. First, the many elements of local communities including churches, lodges, service clubs, recreation departments, donation of volunteer services, community action programs, business donations, and individual contributions. Second, these local efforts are matched by Title III funds of the Older Americans Act of 1965 which provided $141,300 to the State earmarking $7,000 for administration and $134,300 for grants to local agencies, organizations, groups and governments. This young Unit operated on these funds plus $7,000 of matching administration funds appropriated by the legislature. Yet in spite of such a limited state appropriation and having only one professional staff member, Richard W. Michaud, the Services for Aging Unit benefited numerous groups and organizations, assisting thirteen projects to initiate or expand thirty-one senior citizen centers in twelve counties utilizing $263,000 of which local communities provided $139,000. An itemization detailing the location of centers, budgets, geographical area

	Lincoln	Oxford	Penobscot	Piscataquis	Sagadahoc	Waldo	Washington	York
	NONE	Norway Paris	Bangor (3) Harlow Street School YMCA Jewish Community Council Old Town Orono	Dover- Foxcroft	Bath	NONE	NONE	Hollis Kennebunk Saco Sanford
		$13,260.	$54,318.	$11,043.	$10,363.			$25,186.
		6,630.	$26,514.	$8,050.	$5,405.			$10,004.
		6,630.	$27,804.	$2,993.	$4,958.			$15,182.
Rockland ion Dept. k Street d, Maine		Norway - Paris Recreation Commission 223 Main Street Norway, Maine 04268	United Community Services of Penobscot Valley, Incorporated 611 Hammond Street Bangor, Maine 04401	Central Community Council Box 218 Dover-Foxcroft, Maine 04426	Bath YMCA 24 Summer Street Bath, Maine			York County Council On Aging Court house Alfred, Maine 04002
homaston id		Norway, Paris Bryant Pond, Hebron, Otisfield, Oxford, Harrison	Bangor, Brewer, Old Town, Orono, Milford, Bradley, Hampden, Veazie, Eddington, Orrington, Winterport, Carmel, Clifton, Newburg, Hermon, Holden, Kenduskeag, Levant, Glenburn - expect to expand to include entire Penobscot Valley complex	Expect to expand to include Guilford, Milo, Sangerville. Now includes: Atkinson, Sebec, Dover South Mills, Greeley's Landing, Bowerland, Dover-Foxcroft property	Bath, Georgetown, Phippsburg, West Bath, Wiscasset, Woolwich			Entire county as programs are initiated and developed by local people

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served and the organizations administering projects is given in the chart accompanying this article. The thirty-one centers while not providing exactly similar services do have lounges and meeting areas which operate during the main hours of the day ranging from two days a week for four hours, to daily full time. They offer a wide variety and selection of activities chosen and conducted by the senior citizens themselves. Examples are: arts, crafts, dramatics, lunch programs, excursions, trips, discussion groups, counselling and referral (pre-retirement, medical insurance, legal and nutrition), friendly visiting to hospitals and nursing homes, community service volunteering, transportation (e.g. medical appointments) and home health care.

During 1967-68 the Unit will strive to fulfill the demands to broaden its major services beyond activities directly related to the Older Americans Act of 1965. After ten months of intercourse with the State's local environs, groups and clusters of older citizens, it was made clear to the Unit that the plight of older Americans must be advocated and promoted. The consequence of these contacts was the establishment of the following Unit objectives for 1967-68 year: 1) expand and extend the transmission of information about factors relevant to aging, 2) develop educational programs for older persons and communities, 3) expand coordination of programs at the State level, 4) initiate training programs for the project directors, and 5) continue development of Title III projects. Presently embryonic plans are being considered for each of these aspects but substantial disjunctures exist in our social blueprints. Bringing these plans to fruition demands advice and recommendations from interested parties who may have answers to these questions: Who needs what kinds of information when? What types of education are needed by which older citizens in which geographical areas? Which communities need which services? What programs currently administered at the State level need greater coordination? Where should Title III projects be located? It is essential that action be taken in each of these aspects, but needs must be met appropriately and properly. Thus, this report to you concludes by asking any interested reader to submit to the Unit at the State House, Augusta, any concrete recommendations that may be integrated with currently developing plans.

DIPHTHERIA OUTBREAK AT THE STATE HOSPITAL, AUGUSTA, MAINE IN 1964 — *Continued from Page* 172

organizations the Department of Mental Health and Corrections and the Department of Health and Welfare. The Federal Communicable Disease Center of Atlanta, Georgia gave us effective assistance. Our patients, their friends and relatives and other members of our related communities were our firm allies in what we feel was a singularly unexpected but well controlled threat to our hospital existence.

Maine Heart Association Notes
116 State Street, Augusta, Maine

Reappraisal of Digitalis. Digitalis Toxicity

The toxic manifestations produced by overdosage of cardiac glycosides are of great practical importance to the physician, . . . The appearance of any sign or symptom of digitalis toxicity is an urgent indication for adjustment of digitalis dosage, even when the toxic manifestation may appear to be unimportant, . . . Unfortunately, central-nervous-system, gastrointestinal, or other side effects are soon followed by serious cardiac toxicity. . . . contrary to prior clinical impression, the commonly used cardiac glycosides produce the same range and frequency of side effects, and (that) in any individual patient the pattern of toxicity cannot be predicted. . . . The cardiac manifestations are the most important and the most frequent, . . .

Cardiac toxicity is essentially the only cause of death by digitalis.

The arrhythmia and combinations of arrhythmias that can result from digitalis overdosage are many. Almost all known arrhythmias can be produced by digitalis, . . .

The duration of cardiac toxicity varies with the rate of dissipation of the particular glycoside. . . .

Digitalis frequently produces anorexia, nausea, and vomiting. These symptoms can occur with parenteral as well as with oral digitalis. . . .

The nervous-system effects of digitalis are both central and peripheral. Many different manifestations have been described; . . . In addition to the classic visual changes, . . . organic mental syndrome and even stupor can result . . . and a transient but striking peripheral neuropathy can result. . . .

The most important factor in predisposing to digitalis intoxication is serious heart disease; . . . Another important factor is old age, . . . Renal shut down and chronic renal insufficiency favor toxicity. . . . In cyanotic heart or lung disease there is a high incidence of digitalis toxicity. . . . Electrolyte disturbances, particularly depletion of potassium, . . . are important precipitants of toxicity.

Acute myocarditis . . . is likely to be associated with toxic arrhythmias at average doses. Chronic congestive heart failure is associated with progressive sensitivity to digitalis. . . .

Various skin reactions . . . have been described occasionally. . . .

Another unusual side effect is unilateral or bilateral gynecomastia. . . .

Submitted by Jacob B. Dana, M.D., Maine Heart Association
Reference — Lyon A. and Degraff, A., American Heart Journal, Vol. 73, pages 710-712 1967



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Warning: May be habit-forming.

Precautions: Tuinal should be used cautiously in patients with decreased liver function, since prolongation of effect may occur.

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Overdosage: C.N.S. depression. Symptoms—Depression of respiration and of superficial and deep reflexes, slight constriction of the pupils (in severe poisoning, dilation), decreased urine formation, lowered body temperature, coma. Treatment—Symptomatic and supportive (gastric lavage; intravenous fluids; maintenance of blood pressure, body temperature, and adequate respiration). Dialysis may speed removal of barbiturates from body fluids.



Dosage: 50-200 mg. (¾-3 grains) at bedtime.

[031767]

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AMERICAN CANCER SOCIETY - MAINE DIVISION, INC.

Brunswick, Maine

Studies Continue to Determine Whether Cancers are Virus Caused

BUFFALO, N. Y. — Wide-ranging blood studies indicate that a great many humans in the United States and in far parts of the world have been infected with viruses, which may be cancer producing, although relatively few have developed the disease.

The evidence, still regarded as of a preliminary nature, suggests that most people produce antibodies and other weapons of immunity which hold the viruses in check. This immunity is depressed during a few childhood years and late in life — the peak periods for leukemia.

Even newborn babies were found to have antibodies against these viruses; they evidently acquired them from their mothers and were protected by them during their first three months of life.

This was disclosed recently by the American Cancer Society in a report on its research grant to Dr. Julian L. Ambrus and associates at Roswell Park Memorial Institute, the State University of New York at Buffalo, and Makerere Medical College, Kampala, Uganda. Working with Dr. Ambrus were Drs. Helena V. Strandstrom, George E. Moore and Dennis H. Wright. The National Cancer Institute and United Health Foundation of Western New York also helped support the research.

The studies were conducted among hundreds of normal people and patients with cancer and noncancerous diseases in Uganda and Kenya in Africa, Buffalo, N. Y., and Alaska. They were of all ages and of several ethnic origins, including Eskimo, Black African, and Caucasian.

The scientists used for immunity tests cancer cells removed from patients and grown in laboratory dishes. The kinds of cancer represented were mainly Burkitt's lymphoma (which prevails, mainly among children, in a well-defined belt across Africa), Hodgkin's disease (of the lymphatic system), and acute myeloid leukemia. Other scientists have reported finding various kinds of viruses in each of these tumor cell types — most often viruses resembling but not identical with those which cause cold sores; but there still is no proof that the viruses caused the cancers in man.

When the scientists found antibodies against a certain virus in a blood sample, they regarded this as prima facie evidence that the donor had been exposed to or harbored the virus. It appeared that one did not acquire lifelong immunity; antibody levels seemed to rise and fall during the course of a lifetime.

More than 50 percent of the newborn babies examined in New York State had antibodies against Burkitt's lymphoma, leukemia and Hodgkin's disease. Apparently they obtained these antibodies from the mother's blood; the antibodies disappeared within three months after birth.

Antibody levels rose gradually during infancy and childhood to reach peaks at about age 11 years for Burkitt's lymphoma and 20 years for the two other cancers.

Only minor differences were noted in the antibody incidence and pattern among the African, Eskimo and New York populations studied, although blood samples from Eskimo newborns and octogenarians were not available.

Antibodies declined dramatically in cancer patients over 60 and reached the vanishing point at age 80, possibly as a consequence of old age as well as of cancer. Leukemia is most common at this time of life and during infancy — another period of depressed antibody levels.

All cancer patients over 39 years old showed antibodies against all three kinds of cancer cells; from 25 to 80 percent of younger patients had antibodies against one or more types of cancer cells. No normal people or patients, however, showed antibodies against a healthy person's cells which had been grown in culture.

The most interesting finding was that generally in all populations studied antibody levels were lowest in early childhood and in old age, the two age groups when most types of leukemia occur with greatest frequency.

The studies are continuing in an effort to determine whether some cancers are virus caused, whether virtually the entire population is exposed to cancer causing viruses, whether a majority beat the disease by virtue of their healthy natural resistance, and whether cancer takes hold and kills during a period of depressed immunity.

American Cancer Society News Service Release

114TH ANNUAL SESSION OF THE M.M.A. HOUSE OF DELEGATES — *Continued from Page* 180

A. Winchenbach, Helen C. Provost, Dean Fisher, Ernest W. Stein, John R. Davy, Charles A. Hannigan and Leonard G. Miragliuolo.

Stenographic Record – A summary of the proceedings of the House of Delegates is being sent to the county presidents and secretaries and to the delegates and alternates of each county society. (The complete report is on file in the Association's office in Brunswick, where it is available to any member of the Association.)

General Assembly

The General Assembly of the Maine Medical Association was called to order by the President, George E. Sullivan, M.D. at 4:00 P.M. on Monday, June 12, 1967.

Election of President-elect – At this session, Asa C. Adams, M.D. of Orono was elected President-elect.

President's Address – Dr. Sullivan delivered his President's Address at this General Assembly.

ESTHER M. KENNARD
Secretary-Treasurer, M.M.A.

New Members of the Maine Medical Association

AROOSTOOK

Horace R. Allison, M.D., 551 Main St., Presque Isle 04769
Daniel C. Curtin, M.D., 555 Main St., Presque Isle 04769
I. Howard Foy, M.D., Arthur R. Gould Memorial Hosp., Presque Isle 04769

CUMBERLAND

David M. Iszard, M.D., 291 Ocean House Rd., Cape Elizabeth 04107

Deceased

CUMBERLAND

William C. Burrage, M.D., 57 Deering St., Portland 04101, July 30, 1967

KENNEBEC

William N. Runyon, M.D., Veterans Adm., Togus 04330, August 7, 1967

PENOBSCOT

Carl W. Ruhlin, M.D., 336 Mt. Hope Ave., Bangor 04401, May 24, 1967
John R. Sullivan, M.D., 340 No. Main St., Brewer 04412, July 12, 1967
George B. Weatherbee, M.D., Main St., Hampden Highlands 04445, July 15, 1967

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Necrology

Nathaniel B. T. Barker, M.D.

1878-1967



Nathaniel B. T. Barker, M.D., 89, of Yarmouth, Maine died on June 8, 1967. He was born on January 27, 1878 in Dresden, Maine, son of Edward Hall and Martha Twycross Barker.

Dr. Barker graduated from Bowdoin College in 1902 and received his medical degree from Bowdoin Medical School in 1905. He began practice in Woodland in 1905 as mill physician and remained there until 1926. In 1927 he moved to Dark Harbor and in 1933 he located in Yarmouth and remained there in active practice until his death.

Dr. Barker had received many honors in his lifetime including certificates signed by Presidents Franklin D. Roosevelt, Harry S. Truman, Dwight D. Eisenhower and John F. Kennedy attesting to his unpaid services as medical examiner for the Cumberland County Selective Service from 1940 to 1962. He held a medal from Congress "for faithful and loyal service" in this capacity presented to him in 1945 by Governor Horace A. Hildreth. A tribute to Dr. Barker written by Adrian H. Scolten, M.D. was published in the March 1966 issue of the Journal.

He was an Honorary member of the Maine Medical Association and the Cumberland County Medical Society, having received a 50-year pin in 1955, a 55-year pin in 1960 and a 60-year pin in 1965. Dr. Barker was also a member of the American Medical Association, the Kora Temple Shrine and the Masonic Lodge.

Surviving are his widow, the former Catherine Blaisdell and a sister, Miss Pattie Barker of Yarmouth.

M.M.A. STANDING COMMITTEES — 1967-1968

Continued from Page 181

Ake Akerberg, M.D., 2 E. Main St., So. Paris (1 yr.) – (Oxford)
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(January 1, 1967 to January 1, 1969)

Delegate – Paul H. Pfeiffer, M.D., 14 Gilman St., Waterville
Alternate Delegate – George W. Wood, III, M.D., 156 No. Main St., Brewer

A BLUE SHIELD REPORT to DOCTORS



REPORT # 5

Expansion of Blue Shield Accident Provisions

Except for a few groups with special provisions for emergency accident care, benefits of the Blue Shield contract have been payable only when the service was rendered within 24 hours of an accident. Beyond this 24-hour period a benefit was paid only when a covered service was rendered.

Effective with services rendered from August 1, 1967 on, the time limitation will be expanded to 72 hours for all subscribers.

Recommend

With Over 800 Participating MDs

ASSOCIATED HOSPITAL SERVICE OF MAINE
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After the picnic even Gramps Was a victim of intestinal cramps

Parepectolin for quick relief of acute diarrhea
... soothes colicky pain with paregoric*
... consolidates fluid stools with pectin
... adsorbs irritants with kaolin,
and protects intestinal mucosa

In elderly patients it is particularly important to stop the diarrhea fast. Parepectolin helps you control diarrhea promptly and gain the patient's confidence until etiology has been determined.

Parepectolin®

Each fluid ounce of creamy white suspension contains:
*Paregoric (equivalent) (1.0 dram) 3.7 ml.
Contains opium (¼ grain) 15 mg. per fluid ounce.
warning: may be habit forming
Pectin (2½ grains) 162 mg.
Kaolin (specially purified) (85 grains) 5.5 Gm.
(alcohol 0.69%)
Usual Adult Dose: One or two tablespoonfuls three times daily.

ROERER

WILLIAM H. RORER, INC.
Fort Washington, Pa.

Tandearil®
oxyphenbutazone

Tandearil in Painful Shoulder

Therapeutic Effects: Stiffness and pain may diminish within 2 days, and full mobility may be restored within a week. These effects are obtained with oxyphenbutazone alone or combined with physiotherapy or local hormonal injections. The drug is usually well tolerated and does not affect pituitary-adrenal function or immune response.

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should be closely supervised and should be warned to report immediately fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage. Make regular blood counts. Discontinue the drug and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The most common are nausea, edema and drug rash. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. Infrequently, agranulocytosis, or a generalized allergic reaction may occur and require withdrawal of medication. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported but cannot definitely be attributed to the drug. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

Dosage in Painful Shoulder: 600 mg. daily in divided doses for 2 to 3 days; 300 mg. daily thereafter. Usual duration of therapy: 2 to 7 days.

Availability: Tablets of 100 mg. 6562-VI(B)R

For complete details, please refer to full prescribing information.

Geigy

Geigy Pharmaceuticals
Division of Geigy Chemical Corporation
Ardsley, New York

Geigy

Tandearil®
oxyphenbutazone

helps painful shoulders move again



3 out of 4 painful shoulder patients responded well

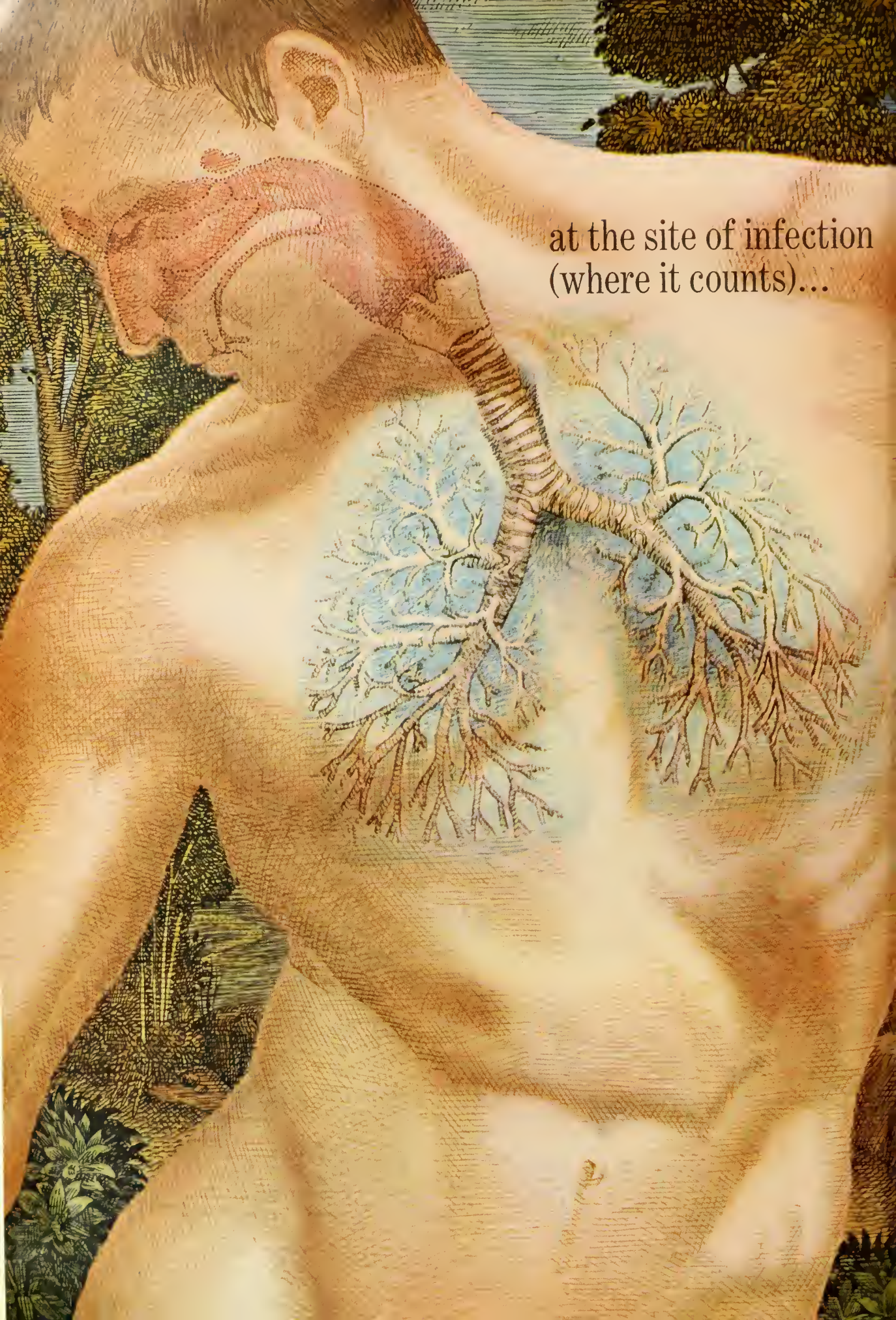
84.2% of 127 patients

81% of 48 patients

Please see adjoining page for brief prescribing summary.

TA-5094PC

Sperling, I. L. Applied Therap. 6 117. 1964
Rosenbaum, E. E., and Schwarz, G. R. Northwest Med. 61:927, 1962


at the site of infection
(where it counts)...

Ilosone® provides more antibacterial activity than any other oral erythromycin

Acid stable, better absorbed... Ilosone produces faster, higher, more prolonged blood levels, even in the presence of food[1-3]

Because it is the most active form of oral erythromycin, Ilosone can help assure consistently greater antibacterial activity at the site of infection. Ilosone produces peak antibacterial blood levels two to four times those of other erythromycin preparations.[1,2] Not only are these levels attained earlier, but they are maintained for much longer periods. Even the presence of food does not seem to affect the activity of Ilosone.[1,3]

In the treatment of patients with bacterial infections susceptible to erythromycin, Ilosone has compiled an excellent therapeutic record. Since it exerts its greatest activity against gram-positive organisms, it is particularly useful in common respiratory and soft-tissue bacterial infections. Ilosone kills—not merely inhibits—streptococci, pneumococci, and more strains of staphylococci than any other macrolide antibiotic. This bactericidal action, coupled with the high antibacterial levels attained, makes Ilosone especially valuable in patients with low host resistance, such as infants, debilitated individuals, and diabetics.

Ilosone has shown no cross-resistance with penicillin and may be effective against organisms that have become resistant to that agent. Despite its high antibacterial activity, Ilosone has demonstrated a low incidence of side reactions. Blood dyscrasias, ototoxicity, and tooth staining have not been observed. Infrequent cases of drug idiosyncrasy, manifested by a cholestatic jaundice, have occurred, but there have been no known definite residual effects.

Now available:
New! Ready-mixed Ilosone Liquid 125! (Contains erythromycin estolate equivalent to 125 mg. erythromycin base per 5-cc. teaspoonful.)

700970

Ilosone® Lilly
Erythromycin Estolate

(See next page for prescribing information.)

Ilosone®/ the most active oral form of erythromycin

Description: Ilosone is the most active form of oral erythromycin that has been developed. Because it is stable in acid, well absorbed, and excreted in lesser amounts in the bile, it provides faster, higher, and longer-lasting levels of antibacterial activity (ABA) in the serum, even when taken with food, than do comparable doses of erythromycin.

Indications: Ilosone is indicated in infections caused by microorganisms sensitive to its action (especially staphylococci, hemolytic streptococci, and pneumococci). The drug is therefore useful in a high proportion of bacterial diseases encountered in clinical practice and particularly in the treatment of bacterial infections of the upper and lower respiratory tract and soft tissues.

In the treatment of acute bacterial pharyngitis and tonsillitis, this antibiotic has promptly eradicated the bacteria (streptococci) and has produced a parallel prompt clinical improvement. There have been no group A beta-hemolytic streptococci resistant to this preparation. In beta-hemolytic streptococcus infections, treatment should be maintained for ten days to prevent the development of rheumatic fever or glomerulonephritis.

Erythromycin estolate has proved to be very effective in pneumococcus pneumonia and in acute bronchitis with pneumococci on culture. Bronchopneumonia and otitis media in children have responded well to its use.

The antibiotic has been used very successfully in staphylococcus infections. Good therapeutic results have been obtained in soft-tissue infections, abscesses, cellulitis, carbuncles, wound infections, and furunculosis.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents. As is the case with any treatment regimen used in these severe conditions, surgical procedures should be performed when indicated, and large dosages of the antimicrobial agents should be employed. In this fashion, Ilosone has been effective in staphylococcus pneumonia, osteomyelitis, septicemia, empyema, and meningitis.

Multiple 500-mg. doses of the drug have also been useful in gonorrhea and syphilis. Since penicillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with preexisting liver disease or dysfunction.

Adverse Reactions: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have developed in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly, usually within forty-eight hours, if the drug is readministered to sensitive patients. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a second time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small compared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extrahepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeared be definitely related to use of the drug, laboratory findings we characterized by increased direct-reacting bilirubin, elevat alkaline phosphatase levels, negative or weakly positive cepha flocculation and thymol turbidity tests, elevated serum glutan oxalacetic transaminase levels, peripheral eosinophilia, and n mal cholecystograms.

Individual idiosyncrasy seems evident since jaundice has r been reported in other patients taking prolonged courses of t medication. Patients with chronic infection have been given 1 to 2 Gm. of the drug daily for periods of two to six months, a patients with rheumatic fever have taken prophylactic doses 0.5 Gm. daily for two years without difficulty. In one group 144 patients who received the drug daily for two years, no jau dice was noted. It was of interest that members of six of th patients' families, who were not taking the drug, had episo of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels w determined in a group of fifty-four adults and children who t 250 mg. of Ilosone daily for an average of sixteen months rheumatic fever prophylaxis. The results were compared w those of a similar group of forty-four patients who received p icillin. There were no cases of jaundice in either group. Elevat of SGPT and serum alkaline phosphatase levels during the cou of treatment was observed in one patient treated with Ilos and in two patients treated with penicillin. Seven other patie in the group receiving Ilosone and four others in the penicil group showed elevations in one of the tests at some time duri administration of the drugs.

Very satisfactory therapeutic results, without toxicity, w reported in 102 pediatric patients who received short-term (t day) courses of Ilosone in the treatment of streptococcus inf tions. Results of liver function tests in these patients w comparable to those in a similar control group who had recei penicillin.

Gastro-intestinal disturbances not associated with hepatic fects are observed in a small proportion of individuals as a re of a local stimulating effect of the medication on the aliment tract; however, the normal intestinal gram-negative bacte flora is not appreciably altered by erythromycin drugs.

Although allergic manifestations are uncommon with the of erythromycin, there have been occasional reports of urtica skin eruptions, and, on rare occasions, anaphylaxis.

Administration and Dosage: Ilosone is administered orally.

Ilosone Pulvules®, Ilosone Liquid 125, Ilosone, 125, for C Suspension, Ilosone Drops, Ilosone Chewable Tablets.

For infants and for children under twenty-five pounds of b weight, the usual dosage is 5 mg. per pound every six hours; children twenty-five to fifty pounds, 125 mg. every six ho (Tablets Ilosone Chewable should be chewed or crushed swallowed with water.)

For adults and for children over fifty pounds, the usual dos of Ilosone is 250 mg. every six hours.

For severe infections, these dosages may be doubled.

When larger doses are indicated, parenteral erythrom therapy should be considered.

In the treatment of syphilis, the recommended total dosag 20 to 30 Gm. given in divided doses for a period of ten to fift days. Close follow-up of the patient is necessary since eryth mycin drugs have not had adequate evaluation in all stage syphilis. Examinations of spinal fluid are recommended as p of the follow-up therapy.

For gonorrhea, 500 mg. four times a day for four days recommended. In the treatment of gonorrhea, patients wit suspected lesion of syphilis should have a dark-field examina before receiving antibiotics, and monthly serologic tests sh be made for a period of three months.

How Supplied: Pulvules Ilosone, Capsules, N.F., 125 and 250 (equivalent to base), in bottles of 24 and 100.

Ilosone Liquid 125, Oral Suspension, U.S.P., 125 mg. (equiva to base) per 5-cc. teaspoonful, in 60-cc. and pint-size packa

Ilosone, 125, for Oral Suspension, N.F., 125 mg. (equiva to base) per 5-cc. teaspoonful, in 60 and 150-cc.-size packa

Ilosone Drops, 5 mg. (equivalent to base) per drop, in 10-cc. packages, with dropper calibrated at 25 and 50 mg.

Tablets Ilosone Chewable, N.F., 125 mg. (equivalent to ba in bottles of 50. [032

References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:69,
2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:398,
3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198, 1960.

Additional information available to physicians upon request.
Eli Lilly and Company, Indianapolis, Indiana 46206.

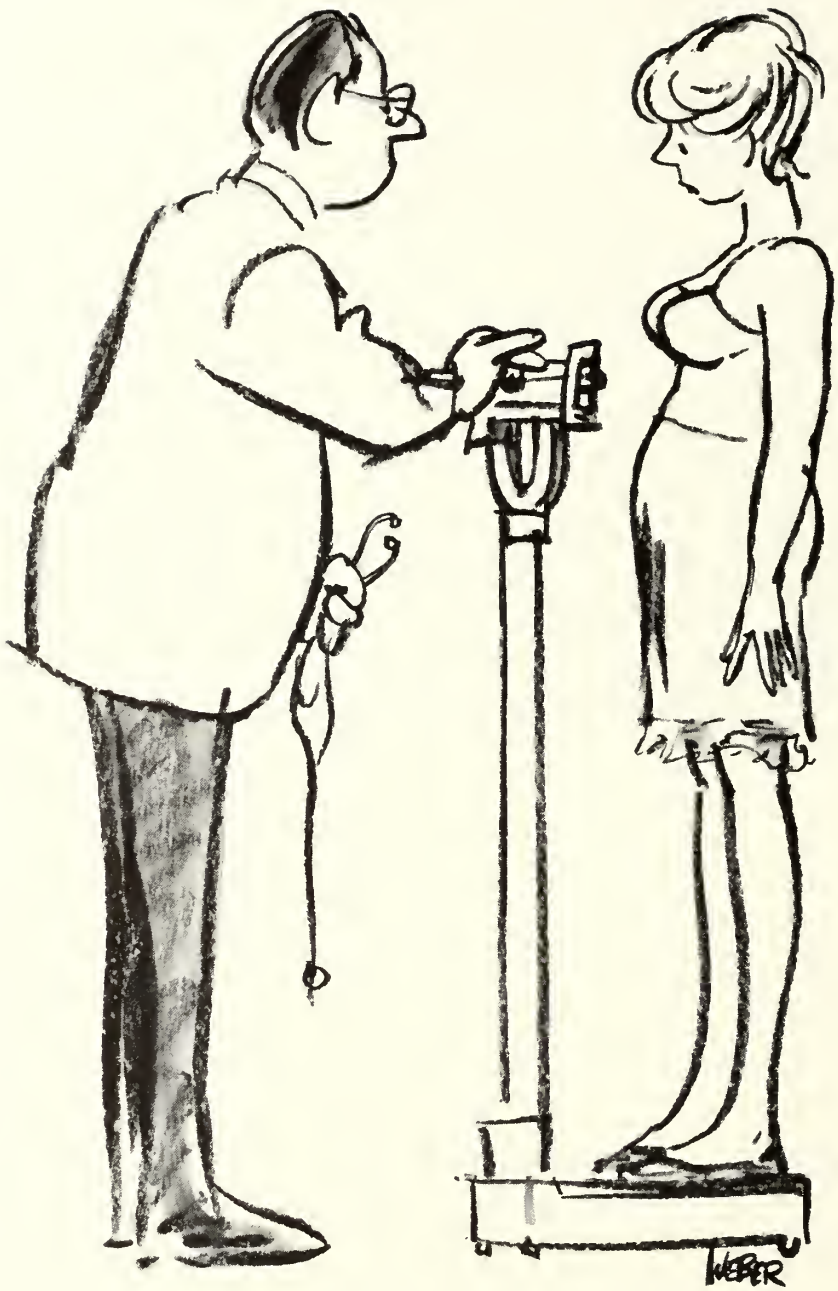


"George wants to know if it's okay to take his cold medicine now, Doctor, instead of seven o'clock?"

The long-continued action of Novahistine LP should help you both get a good night's sleep. Two tablets in the morning and two in the evening will usually provide round-the-clock relief by helping clear congested air passages for freer breathing. Novahistine LP also helps restore normal mucus secretion and ciliary activity—normal physiologic defenses against infection of the respiratory tract. Use cautiously in individuals with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution ambulatory patients that drowsiness may result. Each Novahistine LP tablet contains: phenylephrine hydrochloride, 25 mg., and chlorpheniramine maleate, 4 mg.

NOVAHISTINE® LP

DOW **PITMAN-MOORE** Division of The Dow Chemical Company, Indianapolis



"You're up ten pounds since your last physical. We're going to have to do something about that."

Get them while they're easily reversible.

Obesity doesn't happen suddenly. This insidious process has its beginning—and the chances of reversing it are better—during the *first 10 to 15 pounds of weight gain.* When a new dietary pattern must be established, consider the adjunctive use of BAMADEX SEQUELS. Combining the proven *anorexigenic* action of d-amphetamine with the *tranquilizing* effect of meprobamate, BAMADEX SEQUELS controls appetite throughout the day, usually with a single capsule daily.

Contraindications: Dextro-amphetamine sulfate: In hyperexcitability and in agitated prepsychotic states. Previous allergic or idiosyncratic reactions to meprobamate.
Precautions: Use with caution in patients hypersensitive to sympathomimetic compounds, who have coronary or cardiovascular disease, or are severely hypertensive.

Dextro-amphetamine sulfate: Excessive use by unstable individuals may result in psychological dependence.

Meprobamate: Careful supervision of dose and amounts prescribed is advised, especially for patients with known propensity for taking excessive quantities of drugs. Excessive and prolonged use in susceptible persons, e.g. alcoholics, former addicts, and other severe psychoneurotics, has been reported to result in dependence on the drug. Where excessive dosage has continued for weeks or months, reduce dosage gradually. Sudden withdrawal may precipitate recurrence of preexisting symptoms such as anxiety, anorexia, or insomnia; or withdrawal reactions such as vomiting, ataxia, tremors, muscle twitching and, rarely, epileptiform seizures. Should meprobamate cause drowsiness or visual disturbances, reduce dosage and avoid operation of motor vehicles, machinery or other activity requiring alertness. Effects of excessive alcohol consumption may be increased by meprobamate. Appropriate caution is recommended with patients prone to excessive drinking. In patients prone to both petit and grand mal epilepsy meprobamate may precipitate grand mal attacks. Prescribe cautiously and in small quantities to patients with suicidal tendencies.
Side Effects: Overstimulation of the central nervous system, jitteriness and insomnia or drowsiness. Dextro-amphetamine sulfate: Insomnia, excitability, and increased motor activity are common and ordinarily mild side effects. Confusion, anxiety, aggressiveness, increased libido, and hallucinations have also been observed, especially in mentally ill patients. Rebound fatigue and depression may follow central stimulation. Other effects may include dry mouth, anorexia, nausea, vomiting, diarrhea, and increased cardiovascular reactivity.

Meprobamate: Drowsiness may occur and can be associated with ataxia; the symptom can usually be controlled by decreasing the dose, or by concomitant administration of central stimulants. Allergic or idiosyncratic reactions: maculopapular rash, acute nonthrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever, transient leukopenia. A case of fatal bullous dermatitis, following administration of meprobamate and prednisolone, has been reported. Hypersensitivity has produced fever, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, stomatitis, proctitis (1 case), anaphylaxis, agranulocytosis and thrombocytopenic purpura, and a fatal instance of aplastic anemia, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity, usually after excessive dosage. Impairment of visual accommodation. Massive overdosage may produce drowsiness, lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

Bamadex® Sequels®

Dextro-amphetamine sulfate (15 mg.) with Meprobamate (300 mg.)
Sustained Release Capsules

Lederle

LEDERLE LABORATORIES
A Division of American Cyanamid Company
Pearl River, New York

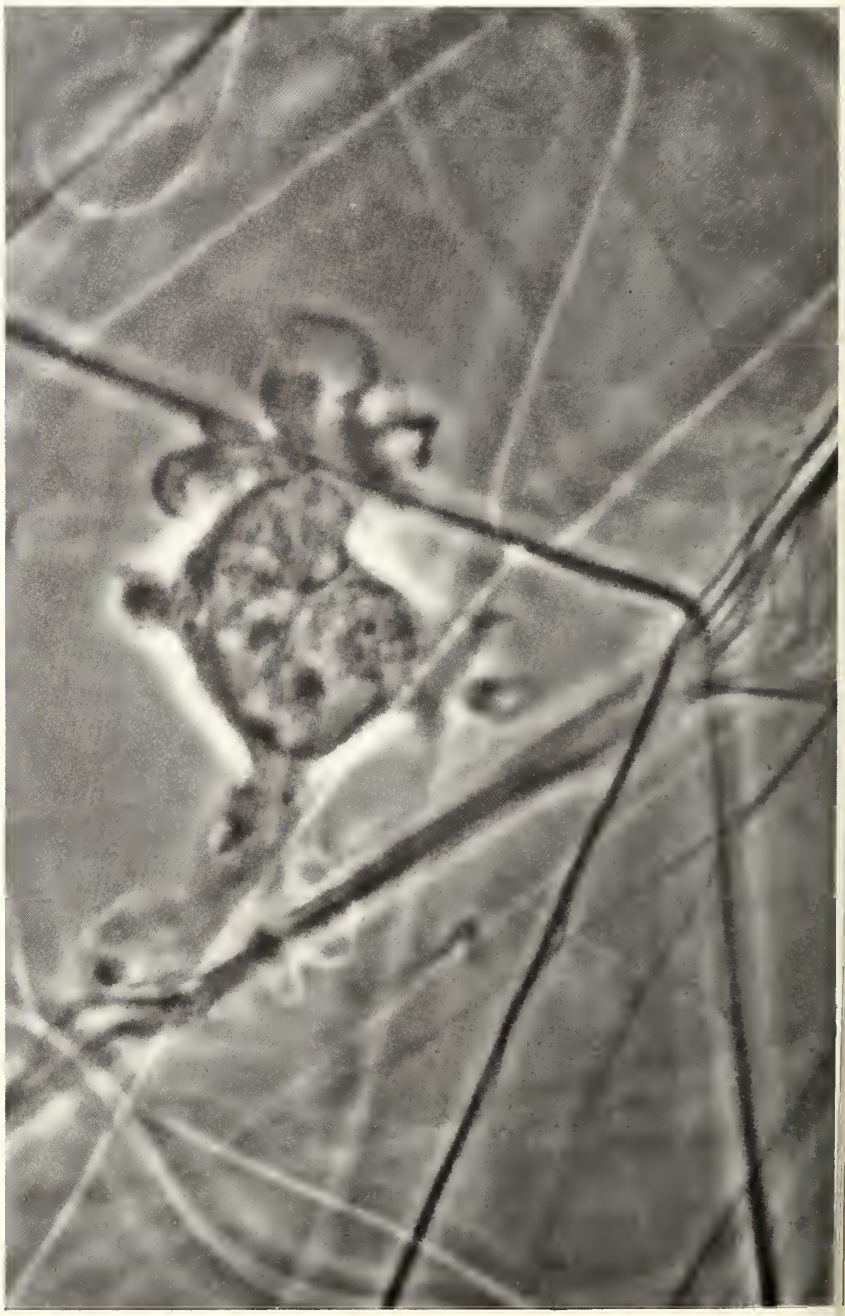
466-7

INFLAMMATION:
A cellular fight for life

A SYNTEX REPORT based on recently developed hypotheses about topical corticosteroids, including the cellular theories of inflammation by Thomas F. Dougherty, Ph.D., University of Utah.

You are looking at a fibroblast fighting for life. This cell—one of the most common found in connective tissue—has literally been poisoned by cytotoxins released from other cells that have ruptured. Soon, if the abnormal activity of this fibroblast does not cease, it, too, will rupture and die—one more casualty in the inflammatory wave of destruction precipitated by injury.

Until a short time ago no one had ever witnessed such a scene at the cellular level. Now, through advanced cinemicrographic techniques, it is possible to view and photograph the inflammatory process as produced experimentally in living animal tissue. This method permits new insight into the mechanism of inflammation and the role of corticosteroids in therapeutic management. Equally important, these techniques shed new light on factors that may make one corticosteroid more effective than another—factors that can be correlated with other chemical, biologic, and clinical parameters.

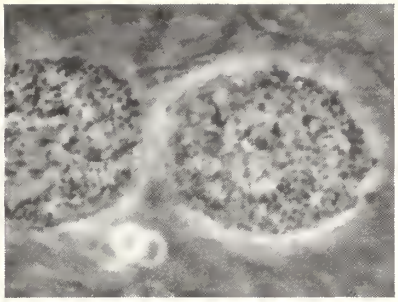


Visual evidence of how corticosteroids influence the inflammatory reaction

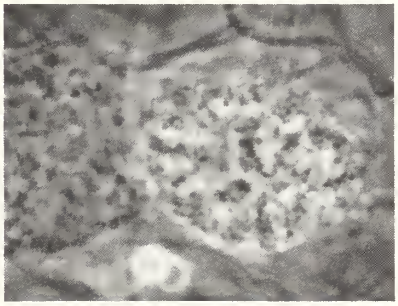
Working with phase-contrast cinemicrography on living animal tissue, Doctors Thomas F. Dougherty and David Berliner of the University of Utah College of Medicine have actually filmed cellular events that occur during the inflammatory reaction. This remarkable study* and additional work by these investigators, as well as by others, have established a new theoretical biologic basis for the antiinflammatory effect of the corticosteroids. (It must be noted that other theories, such as the lysosome or so-called "suicide bag" theory, have been postulated, although it is quite likely that there are more similarities than differences among the various theoretical models.)

The inflammatory wave of destruction

In this investigation an injurious injection of gelatin is used to set off an inflammatory reaction in living mouse tissue. What follows is a wave of destructive cellular activity that comprises the inflammatory response to injury. Mast cells (which contain heparin, serotonin and histamine) take up water, swell and rupture, releasing their contents, which are toxic outside the mast cell wall. These toxins, in turn, cause disintegration of other cells (such as fibroblasts) and the release of additional toxic material. Capillaries, too, take up water and leak unformed blood elements, causing edema. And polymorphonuclears, lymphocytes and perithelial cells invade the inflamed site. As a result of all these changes, the cellular environment reaches a state of turmoil.



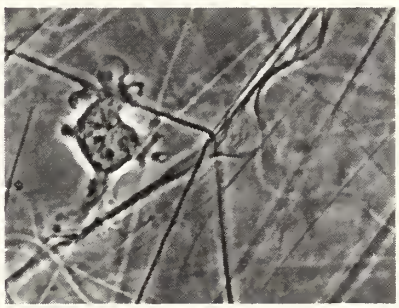
Phase-contrast microscopy showing mast cell before injury.



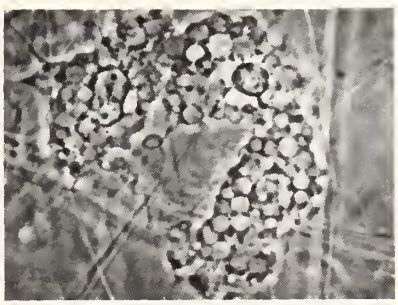
Mast cell (after injury) has broken up and releasecl cytotoxins.

How corticosteroids change the picture

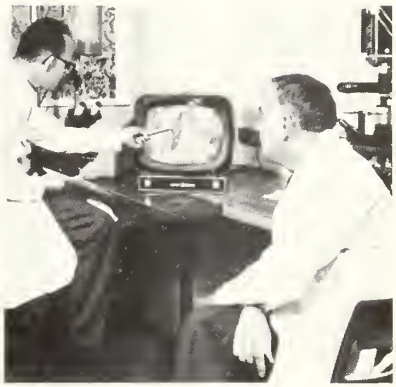
Corticosteroids appear to virtually stop the abnormal cellular activity that constitutes the inflammatory reaction. This permits the body's natural resources to clear up the inflamed area and repair the damaged tissue. This interpretation is supported by the fact that when the injurious gelatin solution is injected simultaneously with a corticosteroid —Synalar (fluocinolone acetonide)— the inflammatory pattern simply does not develop.



Fibroblast in high state of activity, much distorted.



Mast cells showing effects of corticosteroid action: cells are normal in size, shape and activity.



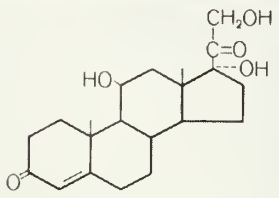
In summarizing his study Doctor Dougherty states: "...we also feel this work may explain why one corticosteroid helps a patient more rapidly and effectively than another. If it does, it is because one corticosteroid is the fastest, most effective inhibitor of the series of inflammatory events at the tissue level."

*A New View of Corticosteroid Action in Inflammatory Dermatoses, a film based on this study, is now available from your Syntex representative.

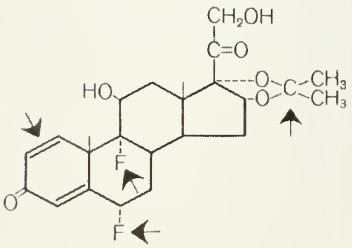
See last page for contraindications, precautions, side effects and dosage.

How advances in chemical design have achieved greater steroid potency

The chemical modification of corticosteroid molecules from the advent of hydrocortisone to the development of Synalar (fluocinolone acetonide) is a prime example of how biochemists can "design" to increase therapeutic activity and minimize undesirable side actions. Below, for example, we see the important changes that were made in reference to the hydrocortisone molecule to produce fluocinolone acetonide, one of the most active of all topical corticosteroids. As a result, a 0.01% preparation of Synalar (fluocinolone acetonide) has been reported to do the work of a 1% hydrocortisone product containing 100 times more cortiscosteroid. And it can often do it more effectively.



Hydrocortisone

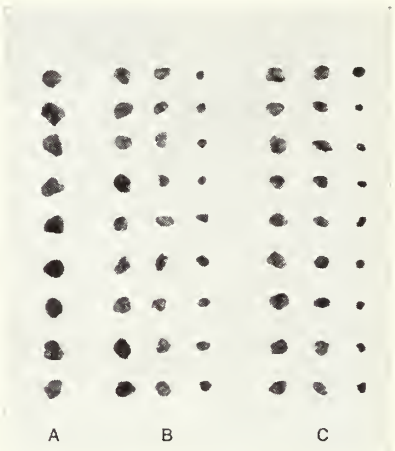


Fluocinolone Acetonide (Synalar)

- *a double bond between carbons 1 and 2*
- *fluorine substitutions at* both *the 6-α, and the 9-α positions*
- *the addition of the acetonide at the 16-α, 17-α positions, thus providing one of the most potent topical corticosteroids available.*

How bioassay tests are used to "predict" therapeutic potential

Biologic assays are another tool used by researchers to help establish the relative activity of corticosteroids. To date no single method of assaying corticosteroid activity has emerged as the ideal "yardstick" for predicting therapeutic potential. Taken together, however, these methods have proved useful. When such tests are run on various corticosteroids, a definite order of corticosteroid activity becomes evident. Compounds with the highest order of activity may be expected to merit clinical trial to establish their high therapeutic potential. When assayed by these methods, fluocinolone acetonide (Synalar) emerges as one of the most active topical corticosteroids, milligram for milligram, available for clinical application today.



THE THYMUS INVOLUTION ASSAY[1-4] is run on adrenalectomized rats. The sizes of the glands are measured, and the degree of involution caused by the steroid is determined as an indication of its potency. In the above photo, the comparative involution of thymus glands achieved with hydrocortisone and Synalar (fluocinolone acetonide) is shown. Untreated controls (A) show normal size. Group B – injected with 1, 2 and 4 mg. of hydrocortisone – show progressively smaller thymuses as does Group C – injected with fluocinolone acetonide – but with only 1/500th the dose of hydrocortisone.



THE ANTIGRANULOMA ASSAY[1-4] also utilizes adrenalectomized rats. Granulomas are induced by subcutaneous implantation of cotton pellets on either side of the thorax. The degree of granuloma inhibition achieved by a steroid reflects its potency. The above photo shows the inhibition of granuloma formation achieved with hydrocortisone and Synalar (fluocinolone acetonide). Untreated controls (A) show large, red granulomas adhering to the pellets. Group B, receiving hydrocortisone and Group C, receiving fluocinolone acetonide, show little, if any, granuloma formation. Fluocinolone acetonide produced the same effect as hydrocortisone with only 1/500th the dose. This assay, as well as the thymus involution assay, measures systemic rather than topical corticosteroid activity. Nevertheless, results by these methods correlate well with other assays and with the milligram potencies of topical steroids in current clinical use.

Worldwide clinical experience confirms the predictable therapeutic potential of Synalar

It is particularly gratifying that the promise of the advanced chemical design and high order of bioassay activity of Synalar (fluocinolone acetonide) has been confirmed by widespread therapeutic application. Indeed, the impressive clinical response rate of Synalar has been documented in no fewer than 232 papers from 22 countries.

Representative Clinical Results with Synalar*

Efficacy Documented in over 4,000 Patients

Condition	Number of Publications	Number of Patients	Significant Improvement†
Contact Dermatitis	27	750	713
Eczematous Dermatitis	21	472	409
Seborrheic Dermatitis	18	442	426
Atopic Dermatitis	24	460	426
Psoriasis	36	1,699	1,510
Neurodermatitis	18	351	324
Total	144	4,174	3,808

*Complete bibliography on request.

†Expressed by the authors as excellent, very good, good, complete remission of inflammation, etc.

PRESCRIBING INFORMATION

For initiation of therapy: Cream 0.025%, 5 and 15 Gm. tubes, 425 Gm. jars; *for emollient effect:* Ointment 0.025%, 15 Gm. tubes; *for maintenance therapy:* Cream 0.01%, 15 and 45 Gm. tubes, 120 Gm. jars; *for intertriginous or hairy sites:* Solution 0.01%, 20 cc. and 60 cc. plastic squeeze bottles; *for infected inflammatory dermatoses:* Neo-Synalar® Cream (0.025% fluocinolone acetonide, neomycin sulfate, equivalent to 0.35% neomycin base), 5 and 15 Gm. tubes.

CONTRAINDICATIONS: Tuberculous, fungal, and most viral lesions of the skin, (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of the components. PRECAUTIONS: Synalar preparations are virtually nonsensitizing and nonirritating. However, the solution may produce burning or stinging when applied to denuded or fissured areas. In some patients with dry lesions, the solution may increase dryness, scaling or itching. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. Prolonged use of any antibiotic may result in overgrowth of nonsusceptible organisms; if this occurs, appropriate therapy should be instituted. When severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. SIDE EFFECTS: Side effects are not ordinarily encountered with topically applied corticosteroids. As with all drugs, however, a few patients may react unfavorably to Synalar under certain conditions. The neomycin in Neo-Synalar Cream rarely produces allergic reactions.

REFERENCES: 1. Lerner, L. J., Bianchi, A., Turkheimer, A. R., Singer, F. M., and Borman, A.: Anti-inflammatory steroids: potency, duration and modification of activities. Ann NY Acad Sci 116:1071 (Aug. 27) 1964. 2. Idem: Comparison of anti-granuloma, thymolytic and glucocorticoid activities of anti-inflammatory steroids. Proc Soc Exp Biol Med 116:385 (June) 1964. 3. Ringler, A.: Activities of adrenocorticosteroids in experimental animals and man, in Dorfman, R. I.: Methods of hormone research, New York, Academic Press, 1964. vol. III. pp. 234-280. 4. Gubersky, V. R.: To be published.

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References: 1. A.M.A. Council on Drugs: *New Drugs* 1966 ed. Chicago: American Medical Association, p. 12. 2. Osol, A.; Pratt, R., and Altschule, M.D.: *The United States Dispensatory,* 26th ed. Philadelphia: J. B. Lippincott Co., 1967, p. 844. 3. Purcell, R. H., and Chanock, R. M.: Role of Mycoplasmas in Human Respiratory Disease. *Med. Clin. N. Amer.* 51:791 (May) 1967.

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Warning—In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated, and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions—Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects—Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes. A rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose related. Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth — dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs discontinue medication and institute appropriate therapy.

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References: 1. Batterman, R. C., and Grossman, A. J.: Fed. Proc. *14*:316, 1955. 2. Goodman, L. S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 3, New York, The Macmillan Company, 1965, p. 331. 3. Roth, J. L. A., *et al.*: Gastroenterology *44*:146, 1963. 4. Conney, A. H., and Burns, J. J.: J. Pharmacol. Exp. Ther. *128*:340, 1960. 5. Settel, E.: Clin. Med. *6*:1373, 1959. 6. Berman, H. H., *et al.*: Dis. Nerv. Syst. *25*:430, 1964. 7. Darienzo, C.: Ibid., *27*:189, 1966.

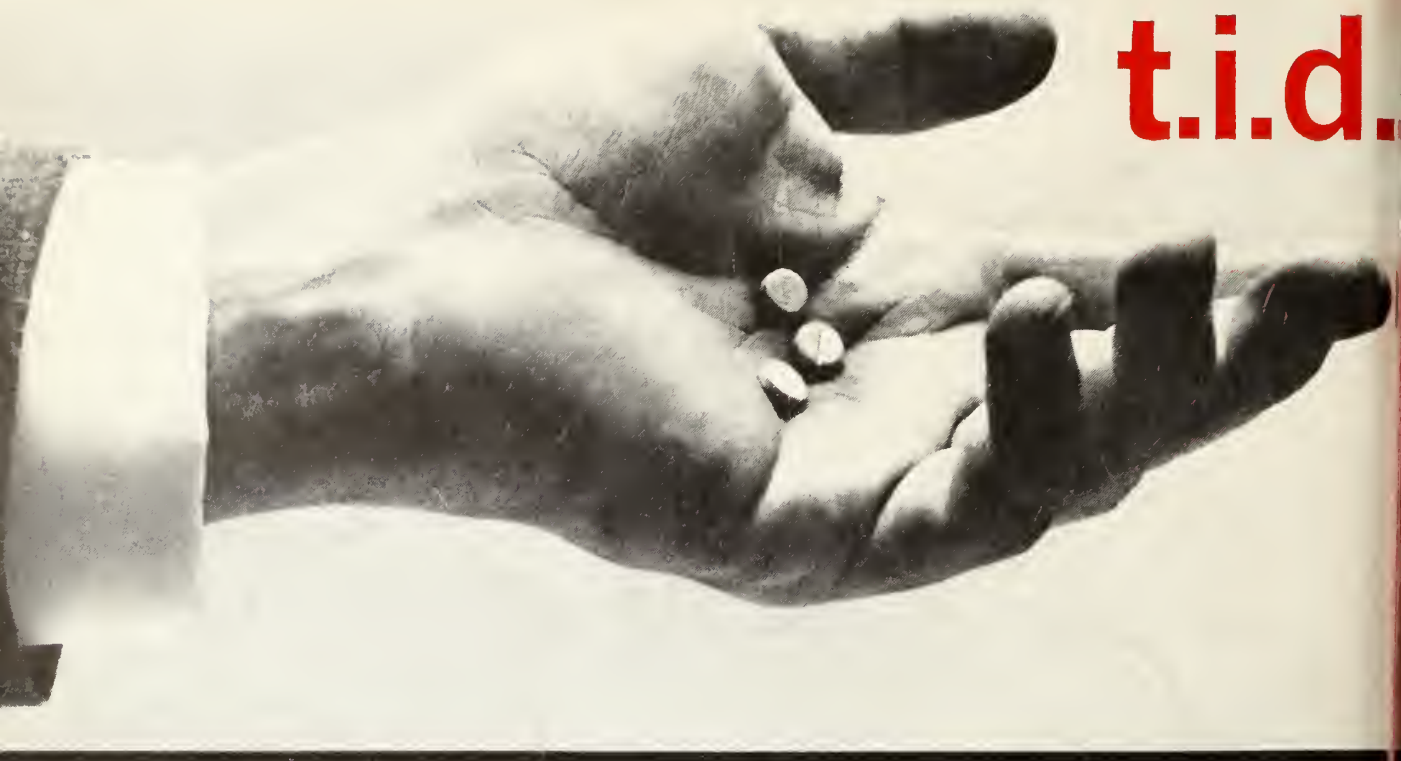
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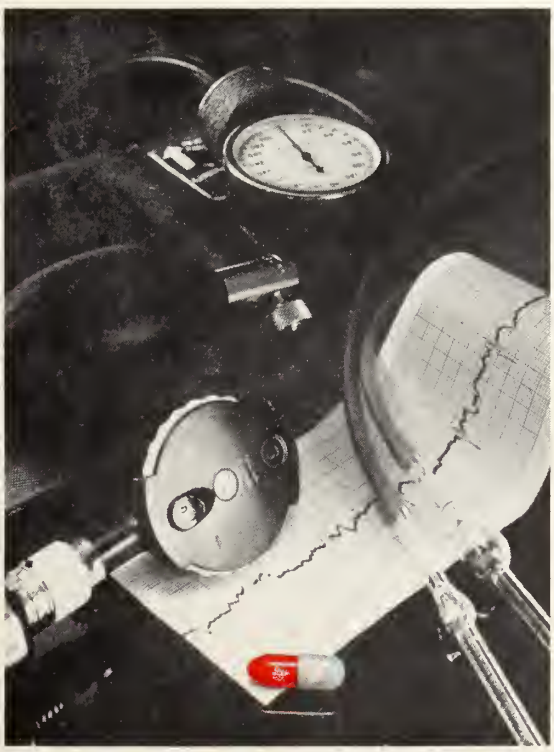
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References:

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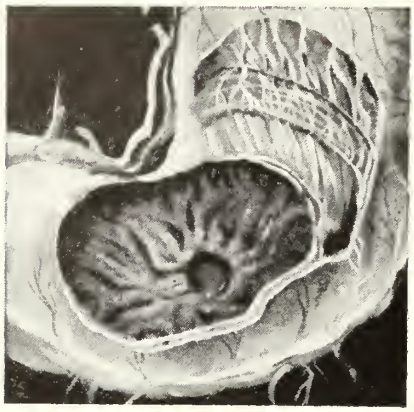
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Warnings: Acute anaphylaxis (may prove fatal unless promptly controlled) is rare but more frequent in patients with previous penicillin sensitivity, bronchial asthma or other allergies. Resuscitative (epinephrine, aminophylline, pressor amines) and supportive (antihistamines, methylprednisolone sodium succinate) drugs should be readily available. Other rare hypersensitivity reactions include nephropathy, hemolytic anemia, leucopenia and thrombocytopenia. In suspected hypersensitivity, evaluation of renal and hematopoietic systems is recommended.

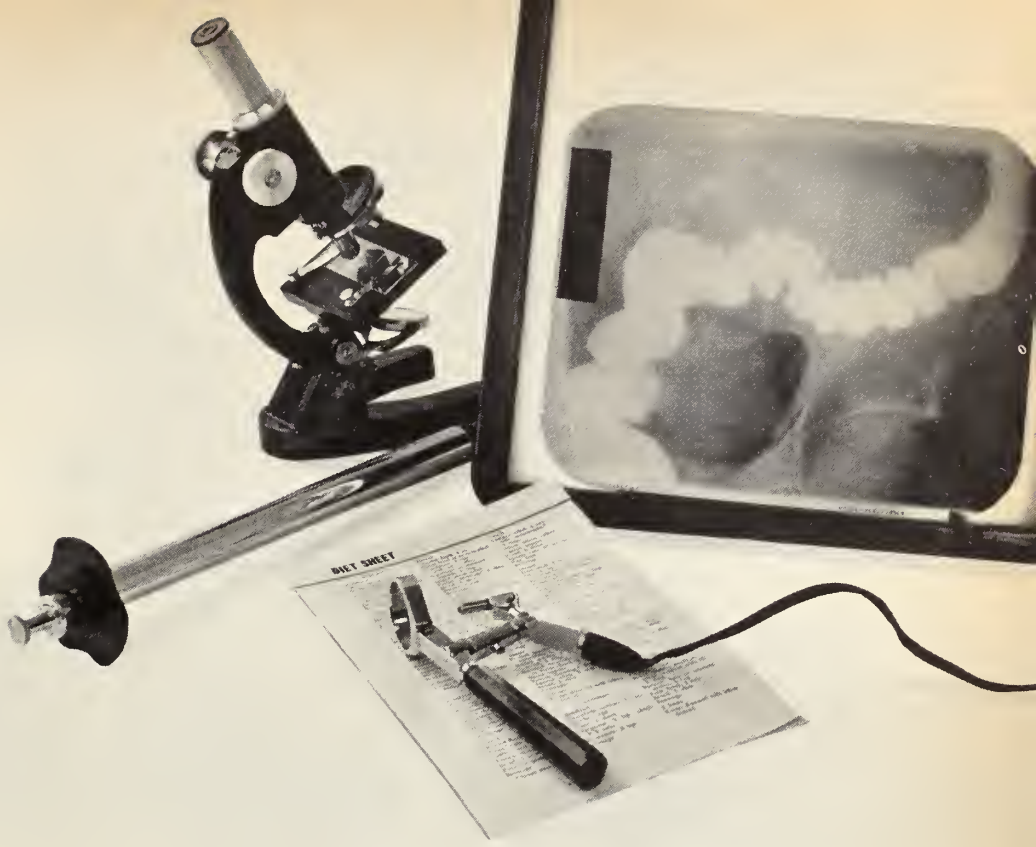
Precautions: In suspected staphylococcal infections, perform proper laboratory studies including sensitivity tests. If overgrowth of nonsusceptible organisms occurs (constant observation is essential), discontinue penicillin and take appropriate measures. Whenever allergic reactions occur, withdraw penicillin unless condition being treated is considered life threatening and amenable only to penicillin. Penicillin may delay or prevent appearance of primary syphilitic lesions. Gonorrhea patients suspected of concurrent syphilis should be tested serologically for at least 3 months. When lesions of primary syphilis are suspected, dark-field examination should precede use of penicillin. Treat beta-hemolytic streptococcal infections with full therapeutic dosage for at least 10 days to prevent rheumatic fever or glomerulonephritis. In staphylococcal infections, perform surgery as indicated.

Adverse Reactions (Penicillin has significant index of sensitization): Skin rashes, ranging from maculopapular eruptions to exfoliative dermatitis; urticaria; serum sickness-like reactions, including chills, fever, edema, arthralgia and prostration. Severe and often fatal anaphylaxis has been reported (see "Warnings").

Composition: Tablets—125 mg. (200,000 units), 250 mg. (400,000 units), 500 mg. (800,000 units); Liquid—125 mg. (200,000 units) and 250 mg. (400,000 units) per 5 cc.

ORAL **PEN • VEE® K**

(potassium phenoxymethyl penicillin) Wyeth®



in digestive disorders:

B and C vitamins aid therapy. Nausea, vomiting, and severe diarrhea may seriously interfere with the digestion and absorption of nutrients. STRESSCAPS capsules, containing therapeutic quantities of vitamins B and C, may help meet the needs of these patients. In digestive disorders, as in many stress conditions, STRESSCAPS vitamins aid therapy.



Stresscaps®

Stress Formula Vitamins Lederle

FOR PROFESSIONAL RECOMMENDATION ONLY

Each capsule contains:

Vitamin B_1 (as Thiamine Mononitrate)	10 mg
Vitamin B_2 (Riboflavin)	10 mg
Vitamin B_6 (Pyridoxine HCl)	2 mg
Vitamin B_{12} Crystalline	4 mcgm
Vitamin C (Ascorbic Acid)	300 mg
Niacinamide	100 mg
Calcium Pantothenate	20 mg

Recommended intake: Adults, 1 capsule daily, for the treatment of vitamin deficiencies. Supplied in decorative "reminder" jars of 30 and 100; bottles of 500.

LEDERLE LABORATORIES, A Division of American Cyanamid Company, Pearl River, New York

692—6—3943

Lederle

Winthrop

announces

a breakthrough in the control of pain

Talwin®

brand of

pentazocine

(as lactate)

a potent, injectable non-narcotic

For every physician who has ever prescribed morphine

Talwin is the new potent non-narcotic injectable analgesic which is indicated for relief of all types and degrees of pain in acute and chronic disorders. Talwin 30 mg. is usually as effective an analgesic as morphine 10 mg. or meperidine 75 to 100 mg., but needs no narcotics controls. The duration of action of Talwin may sometimes be less than that of morphine.

Talwin is relatively free from adverse effects of morphine, such as constipation, urinary retention or severe respiratory depression.

It has been used, in varying dosages, in over 12,000 patients for relief of pain of medical disorders, of active labor and postoperative pain; also for preoperative or preanesthetic medication and as an adjunct to anesthesia.

A brochure incorporating analyzed information on Talwin is available. The completeness of the information will permit you to evaluate the role Talwin can play in your practice.

You can depend on Talwin to relieve pain:

WHATEVER the intensity of the pain
the cause of the pain
the site* of the pain
the duration of the pain
the chronicity of the pain
the age† of the patient

Talwin does not require a narcotics prescription

The World Health Organization Expert Committee on Dependence-Producing Drugs concluded that "...there was no need at this time for narcotics control of pentazocine [Talwin] internationally or nationally." (*WHO Tech. Rep. Ser.*, No. 343, 1966, p. 6.)

It is our sincere belief that the discovery of Talwin by Winthrop Laboratories will be of great value to you and your patients for whom you may have to prescribe a potent analgesic.

*Talwin should not be used for patients with increased intracranial pressure, head injury or pathologic brain conditions.

†Until sufficient experience is gained, it should not be administered to children under 12 years of age.

'alwin—brand of pentazocine (as lactate)

)ntraindieations: *Inereased Intraeranial Pressure, Head Injury, Pathologic Brain Conditions in whieh elouding of sensorium is desirable.* Talwin (brand of pentazocine) should not be adminis-'ed in these cases, since drug-induced sedation, dizziness, nausea, respiratory depression could be misleading.

'eeautions: *Pregnaney.* No teratogenic or embryotoxic effects tributable to the use of Talwin have been seen in extensive repro-uctive studies in animals; however, like all new drugs, Talwin ould be given with caution to pregnant women. A large number patients in labor have received the drug with no adverse reac-)ns other than those that occur with commonly used strong algesics. However, as with other strong analgesics, Talwin should used with caution in women delivering premature infants.

nbulatory Patients. Since sedation, dizziness, and occasional phoria have been noted, ambulatory patients should be warned)t to operate machinery, drive cars, or unnecessarily expose them-lves to hazards.

ertain Respiratory Conditions. The possibility that Talwin (brand pentazocine) may cause respiratory depression should be con-lered in treatment of patients with bronchial asthma. Talwin rand of pentazocine) should be administered only with caution d in low dosage to patients with respiratory depression (e.g.,)m other medication, uremia, or severe infection), obstructive spiratory conditions, or cyanosis.

tients Dependent on Narcotics. Because Talwin is a narcotic-tagonist, patients dependent on narcotics and receiving Talwin ay occasionally experience certain withdrawal symptoms. Talwin ould be given with special caution to such patients. It has been served that some patients previously given narcotic-analgesics r one month or longer had mild withdrawal symptoms when the ug was replaced with the analgesic, Talwin. After a short period adjustment the subjects were usually able and willing to con-ue taking Talwin, and relief of pain was satisfactory.

)naddicted Patients Receiving Narcotics. Symptoms believed to indicative of antagonism to the opiate may be observed rarely th administration of Talwin to patients receiving opiates for a ort time. Intolerance or untoward reactions are seldom observed ter administration of Talwin to patients who have received single ses or who have had limited exposure to narcotics.

)paired Renal or Hepatie Funetion. Although laboratory tests ve not indicated that Talwin (brand of pentazocine) causes or creases renal or hepatic impairment, the drug should be adminis-red with caution to patients with such impairment. Extensive er disease appears to predispose to greater side effects (e.g., arked apprehension, anxiety, dizziness, sleepiness) from the usual nical dose, and may be the result of decreased metabolism of the ug by the liver.

yocardial Infarction. As with all drugs, Talwin (brand of penta-cine) should be used with caution in patients with myocardial farction who have nausea or vomiting.

liary Surgery. Until further experience is gained with the effects Talwin on the sphincter of Oddi, the drug should be used with ution in patients about to undergo surgery of the biliary tract.

lverse Effeets: Talwin is relatively free from the undesirable side fects associated with morphine, such as constipation, urinary re-ntion, or severe respiratory depression. Furthermore, Talwin oduces less nausea, vomiting, and diaphoresis than meperidine.

over 12,000 patients who received Talwin intramuscularly, sub-taneously, or intravenously, nausea, the most frequent adverse fect, occurred in approximately 5.0 per cent. In decreasing order occurrence were vertigo, dizziness or lightheadedness; vomiting; d euphoria. Respiratory depression was reported as an adverse action in 1.0 per cent.

ne incidence of each of the other adverse effects was well below 0 per cent: constipation, circulatory depression, diaphoresis, uri-ary retention, alteration in mood (nervousness, apprehension, pression, floating feeling), hypertension, sting on injection, head-ache, dry mouth, flushed skin including plethora, altered uterine contractions during labor, dermatitis including pruritus, dreams, paresthesia, and dyspnea occurred rarely after administration of Talwin (brand of pentazocine). Furthermore, each of the following adverse reactions occurred in less than 0.1 per cent: tachycardia, visual disturbance (blurred vision, diplopia and nystagmus), hallucinations, disorientation, weakness or faintness, muscle tremor, chills, allergic reactions including edema of the face, taste alteration, insomnia, diarrhea, cramps, and miosis; laryngospasm in one patient.

Talwin has not produced severe respiratory embarrassment in adults (never apnea), even with large amounts. A small number of newborn infants whose mothers received Talwin during labor had transient apnea. The incidence of temporary diminution in the rate or strength of uterine contractions is low after administration of Talwin, similar to that following meperidine hydrochloride. (In reporting no interference with normal labor in patients receiving Talwin, one investigator further stated that the drug may increase uterine activity.) Generally, no significant fetal heart rate change occurs.

Laboratory tests of blood and of liver and kidney functions have revealed no significant abnormalities. A minimum and probably insignificant increase in the per cent of eosinophils in peripheral blood counts and bone marrow occurred occasionally.

Talwin is well tolerated by patients with diabetes mellitus, and no changes in insulin requirements have been observed.

Dosage and Administration: *Adults, Exeluding Patients in Labor.* Average recommended single parenteral dose is 30 mg., by intramuscular, subcutaneous, or intravenous route; may be repeated every three to four hours. Pain has been relieved in most patients with not more than three doses daily. Infrequently, selected patients have received single doses as high as 60 mg. *Patients in Labor.* A single, intramuscular 30 mg. dose has been most commonly administered. An intravenous 20 mg. dose has given adequate pain relief to some patients in labor when contractions become regular, and this dose may be given two or three times at two- to three-hour intervals, as needed.

Children Under 12 Years of Age. Since clinical experience in children under twelve years of age is limited, the use of Talwin (brand of pentazocine) in this age group is not recommended.

Duration of Therapy. Patients with chronic pain who received Talwin for prolonged periods (e.g., over 300 days) experienced no withdrawal symptoms even when administration was stopped abruptly; furthermore, there was no tolerance to the analgesic effect.

CAUTION. Talwin should not be mixed in the same syringe with soluble barbiturates because precipitation will occur.

Treatment of Overdosage or Respiratory Depression. Talwin has not produced apnea or severe respiratory embarrassment in adults, even in large doses. Occasionally, however, moderate respiratory depression may occur. Means of maintaining proper oxygenation should be available in case of overdosage or respiratory depression, and methylphenidate (Ritalin®) should be administered parenterally. The usual narcotic-antagonists, such as nalorphine, are not effective respiratory stimulants for depression due to Talwin.

How Supplied: *Ampuls of 1 ml.*, **eontaining Talwin® (pentazocine) as laetate equivalent to 30 mg. base** and 2.8 mg. sodium chloride, in Water for Injection. **Boxes of 10, 25, and 100.**

Multiple dose vials of 10 ml., **each 1 ml. eontaining Talwin (pentazocine) as laetate equivalent to 30 mg. base,** 2 mg. acetone sodium bisulfite, 1.5 mg. sodium chloride, and 1 mg. methylparaben as preservative, in Water for Injection. **Boxes of 1.**

The pH of Talwin solutions is adjusted between 4 and 5 with lactic acid and sodium hydroxide.

Winthrop

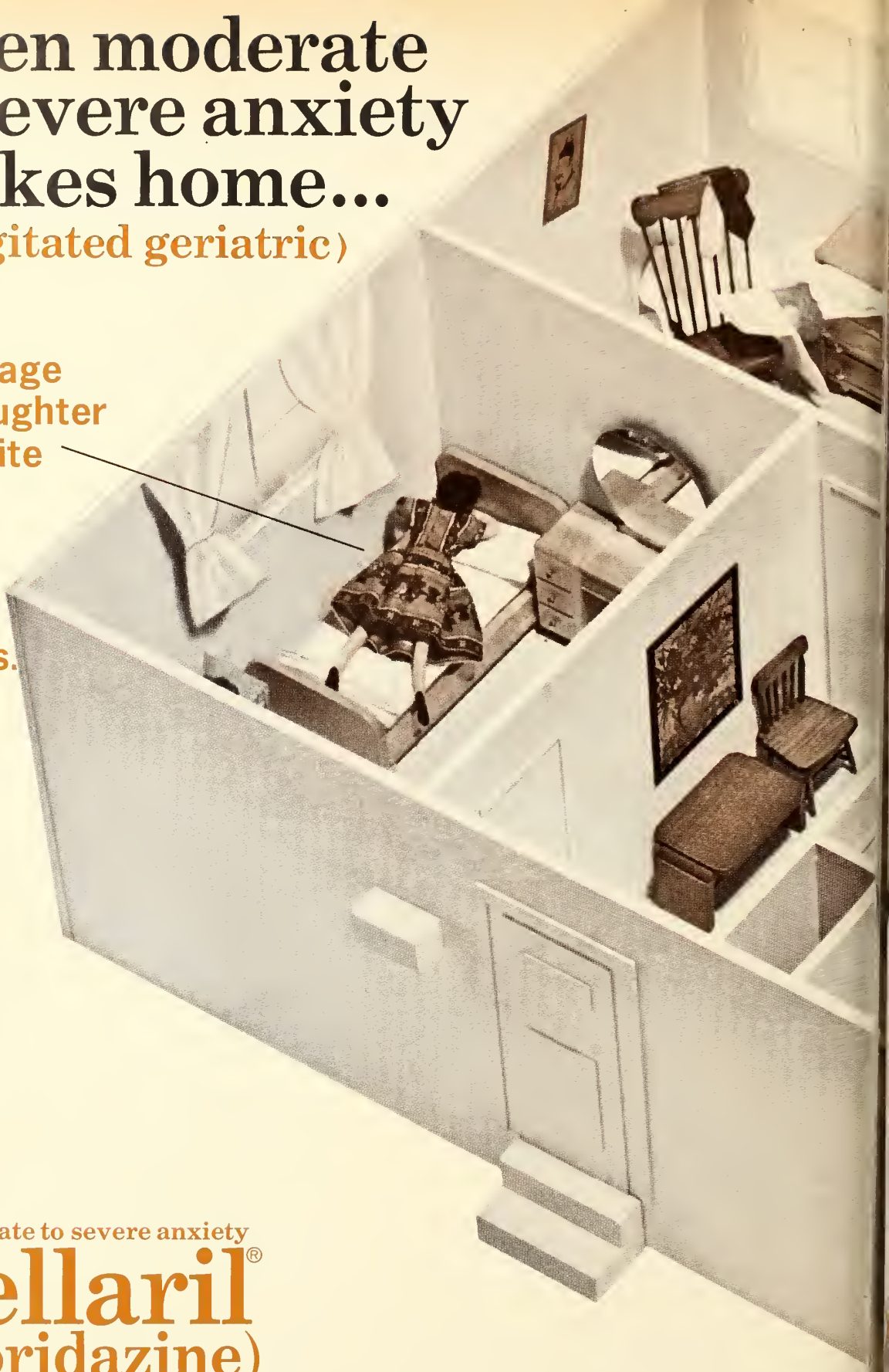
Winthrop Laboratories, New York, N.Y. 10016

(1150M)

When moderate to severe anxiety strikes home...

(the agitated geriatric)

His teen-age granddaughter won't invite friends home because of his outbursts.



for moderate to severe anxiety

Mellaril®
(thioridazine)
25 mg. t.i.d.

SANDOZ

His slovenly room and habits create more tension.

His disturbances at the table make every meal a nightmare.



His daughter can't please him. There is "just no living with him."

See following page for prescribing information.

When moderate to severe anxiety strikes home...

Anxiety that *seriously interferes* with the individual's performance at work, at home, or in the community may be regarded as *moderate to severe* in degree.

Mellaril often recommends itself to the treatment of moderate to severe anxiety because it

- helps control the most frequent symptoms: marked tension, agitation, apprehension, restlessness, hypermotility
- often alleviates anxiety-induced somatic complaints
- frequently helps strengthen emotional resources
- helps the patient maintain realistic contact with environment, closer harmony with family

Thus, when you consider the anxiety moderate to severe... consider Mellaril.

Contraindications: Severely depressed or comatose states from any cause, and in association with or following MAO inhibitors; severe hypertensive or hypotensive heart disease.

Precautions: Hypersensitivity reactions (e.g., leukopenia, agranulocytosis) and convulsive seizures are infrequent. Pigmentary retinopathy has been observed where doses in excess of those recommended were used for long periods of time. May potentiate central nervous system depressants, atropine, and phosphorus insecticides. Where complete mental alertness is required, administer the drug cautiously and increase dosage gradually. In addition, orthostatic hypotension (especially in female patients) has been observed. Epinephrine should be avoided in treatment of drug-induced hypotension.

Side Effects: Pseudoparkinsonism and other extrapyramidal disorders are infrequent; drowsiness, especially in high doses early in treatment, may occur; nocturnal confusion, dryness of the mouth, nasal stuffiness, headache, peripheral edema, lactation, galactorrhea, and inhibition of ejaculation are noted on occasion; photosensitivity and other allergic skin reactions may occur but are extremely rare.

Before prescribing, see package insert for full product information.

for moderate to severe anxiety

Mellaril®
(thioridazine)
25 mg. t.i.d.

SANDOZ

mudrane®

for

- EMPHYSEMA
- ASTHMA
- CHRONIC BRONCHITIS
- BRONCHIECTASIS

The fast-disintegrating uncoated tablet gives relief in 15 minutes

Each tablet contains:

Potassium Iodide	195 mg.
Aminophylline	130 mg.
Phenobarbital, Caution: May be habit forming...	21 mg.
Ephedrine HCl	16 mg.

FEDERAL LAW PROHIBITS
DISPENSING WITHOUT PRESCRIPTION

Precautions: Usual for aminophylline-ephedrine-phenobarbital. Iodides may cause nausea, long use may cause goiter. Discontinue if symptoms of iodism develop.

Iodide contraindications: tuberculosis, pregnancy.

DOSAGE

One tablet, with full glass of water, 3 or 4 times daily.

Dispensed in bottles of 100 and 1000 tablets.

MUDRANE GG—Formula, dosage and package identical to Mudrane—*except*—100 mg. glyceryl guaiacolate replaces the potassium iodide. The value of Mudrane cannot be enjoyed by a small group in which K.I. is contraindicated. Mudrane GG is prepared for this group.

MUDRANE GG ELIXIR—Four 5 cc teaspoonfuls is equivalent to one Mudrane GG tablet. Dosage adjusted to age and weight of child. Mudrane GG Elixir is for pediatric patients and those who think they cannot swallow tablets. Dispensed in pint and half gallon bottles.

WM. P. POYTHRESS & CO., INC.
RICHMOND, VIRGINIA 23217
Manufacturers of ethical pharmaceuticals since 1856



New view of an oral contraceptive at work

Although suppression of ovulation remains the primary mode of action of oral contraceptives, newer knowledge indicates that products like Norinyl-1—a combination of both low-dosage progestogen and estrogen for the full treatment cycle—may provide multiple action that helps explain their unexcelled record of contraceptive effectiveness. This report explores the possible secondary protective mechanisms offered by combined hormonal administration.

Accumulating evidence has indicated that sparse, highly viscous cervical mucus has a possible adverse effect on the motility and survival of spermatozoa.

The estrogen-opposing progestational ingredient of Norinyl-1 (norethindrone 1 mg. with mestranol 0.05 mg.) changes the usual mid-cycle picture of a thin, watery cervical mucus. The result—a built-in barrier that appears to inhibit sperm from reaching the ovum should one be released. The inset in the adjoining photograph shows immobile spermatozoa as they appear in cervical mucus taken from a patient treated with Norinyl-1.

See last page for contraindications, precautions, side effects and dosage.

How the estrogen-opposing action of Norinyl-1 creates cervical mucus that may be hostile to sperm penetration

Normally, estrogen activity during the fertile midcycle stimulates the production of a profuse and watery cervical mucus that permits maximum sperm motility and promotes penetration.

But what happens when Norinyl-1 is administered? Its potent progestogen, norethindrone, opposes estrogen stimulation of cervical mucus. Consequently, the amount of mucus decreases and its viscosity increases. This results in a sparse but thick mucus barrier that appears to diminish the vitality of the sperm and to impair its powers of penetration.

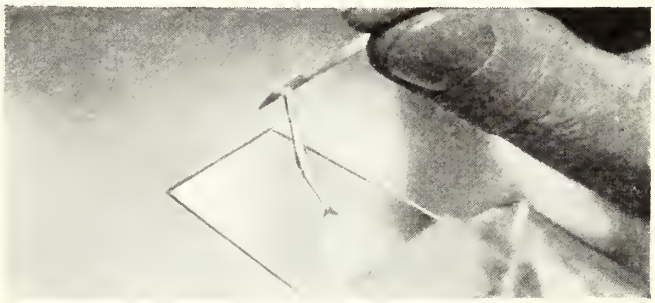
The role of viscous cervical mucus as a secondary action of Norinyl-1

In a report on 89 patients taking this medication,* cervical mucus obtained from cycle day 5 to cycle day 29 appeared scant and thick and exhibited little or no Spinnbarkeit.

In the opinion of this investigator, the effect on cervical mucus may be sufficient to prevent conception.

*Cohen, M. R.: Symposium: Mechanisms of Action of Low Dosage Oral Contraceptive, Yale University Medical Center, New Haven, Conn., April 6, 1967.

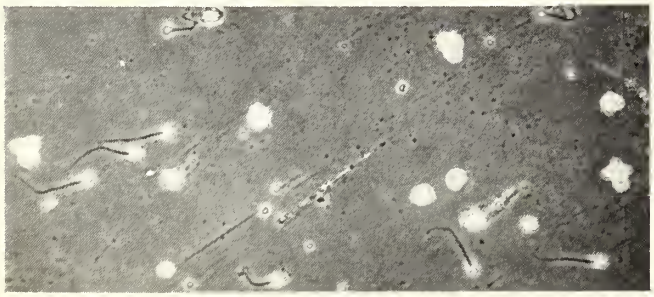
Normal cervical mucus at midcycle in untreated patient is known to permit sperm motility... promote sperm penetration.



Cervical mucus is thin and watery with a stretchability (Spinnbarkeit) of 15 to 20 cm.

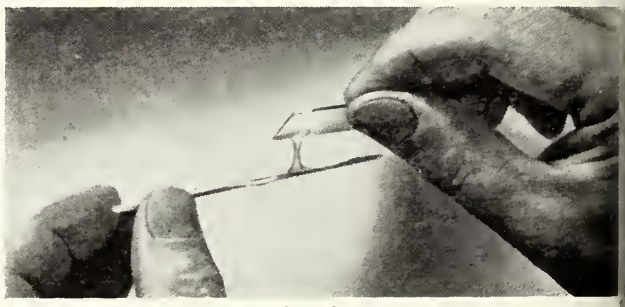


Thin, watery mucus crystallizes into this well-defined, fernlike pattern within a minute.

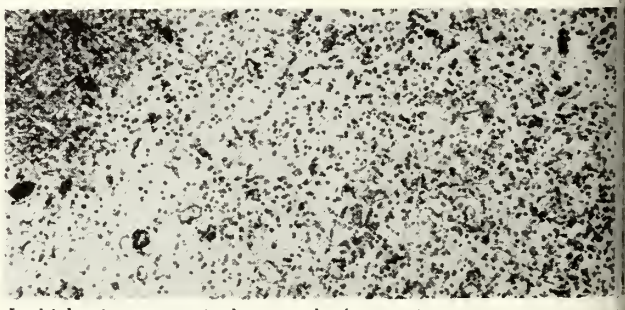


Spermatozoa appear healthy, are active and freemoving.

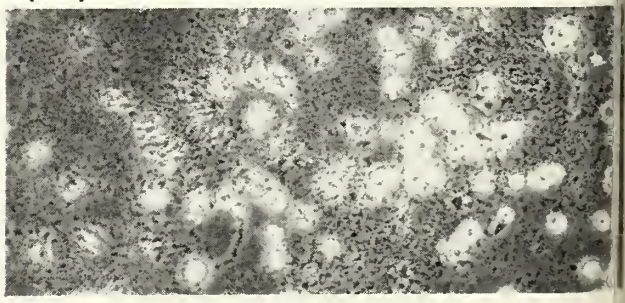
Viscous cervical mucus at midcycle produced by Norinyl-1 appears to impair sperm vitality... inhibit penetration.



Cervical mucus is scanty, thick and viscous. Spinnbarkeit is 1 cm. or less.



In thick, viscous cervical mucus the fern pattern is poorly defined or absent.

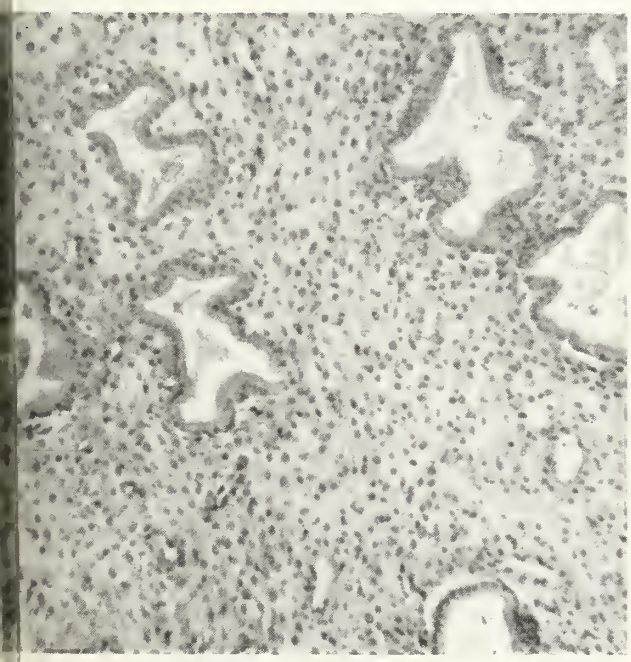


Immobile spermatozoa as they appear in cervical mucus taken from a patient treated with Norinyl-1.

low Norinyl-1 lters normal ndometrial responses– nother possible rotective mechanism

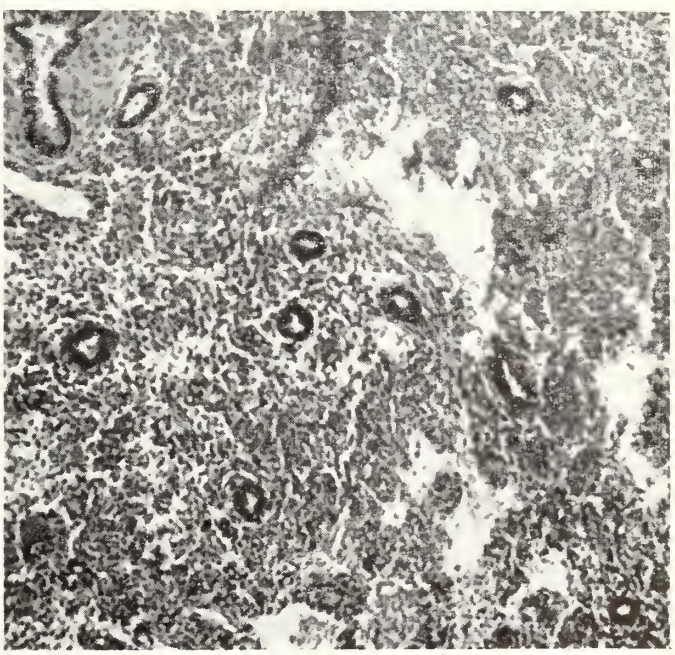
us suppose that an ovum is released—as occurs in an asional, rare case—and somehow a sperm succeeds in etrating the cervical mucus barrier. Should this come about, additional action of Norinyl-1 may protect the patient n unwanted pregnancy. The theory is that progestogen intake kes endometrial tissue unreceptive to implantation.

lometrium of reated patient



onally, the endometrium progresses through proliferative phase stimulated by estrogen and a etory phase stimulated by progesterone. ng the secretory phase the endometrium is ptive to the fertilized ovum.

Endometrium produced by Norinyl-1



When Norinyl-1 is administered its progestogen component—norethindrone—accelerates the secretory phase and suppresses glandular and vascular development.

st page for contraindications, precautions, side effects and dosage.

new Norinyl-1® tablets

(norethindrone 1mg c mestranol 0.05mg)

effective fertility control
on half the previous dosage

maintains ratio
of the established
norethindrone/mestranol
combination

lower cost

new Norinyl®-1

(norethindrone 1mg. c̄ mestranol 0.05mg.) tablets

Reduction of oral contraceptive dosage to lowest effective levels become a well-accepted principle of conservative medical prac In keeping with this view, Norinyl is now available in a new strer in which *both* norethindrone and mestranol are reduced 50 per Studies show that Norinyl-1 achieves fertility control with only mg. of combined progestogen and estrogen per tablet.

Norethindrone was first reported for use as a progestational ager human beings in 1955. Norethindrone 2 mg. with mestranol 0.1 mg an oral contraceptive, is currently in use by over 2,000,000 wor Clinical experience now establishes that Norinyl-1 also amply m the criteria of reliability and safety.*

*Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965.

PRESCRIBING INFORMATION

Contraindications: 1. Patients with thrombophlebitis or with a history of thrombophlebitis or pulmonary embolism. 2. Liver dysfunction or disease. 3. Patients with known or suspected carcinoma of the breast or genital organs. 4. Undiagnosed vaginal bleeding.

Warnings: 1. Discontinue medication pending examination if there is sudden partial or complete loss of vision or if there is a sudden onset of proptosis, diplopia, or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn. 2. Since the safety of Norinyl-1 in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods, pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule, the possibility of pregnancy should be considered at the time of the first missed period. 3. Detectable amounts of the active ingredients in oral contraceptives have been identified in the milk of mothers receiving these drugs. The significance of this dose to the infant has not been determined.

Precautions: 1. The pretreatment physical examination should include special reference to breast and pelvic organs, as well as a Papanicolaou smear. 2. Endocrine and possibly liver function tests may be affected by treatment with Norinyl-1. Therefore, if such tests are abnormal in a patient taking Norinyl-1, it is recommended that they be repeated after the drug has been withdrawn for 2 months. 3. Under the influence of estrogen-progestogen preparations, preexisting uterine fibroids may increase in size. 4. Because these agents may cause some degree of fluid retention, conditions that may be influenced by this factor, such as epilepsy, migraine, asthma, cardiac, or renal dysfunction, require careful observation. 5. Although a cause and effect relationship has not been established, Norinyl-1 should be used with caution in patients with a history of cerebrovascular accident. 6. In relation to breakthrough bleeding, as in all cases of irregular bleeding *per vaginam*, nonfunctional causes should be borne in mind. In cases of undiagnosed vaginal bleeding, adequate diagnostic measures are indicated. 7. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. 8. Any possible influence of prolonged Norinyl-1 therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. 9. A decrease in glucose tolerance has been observed in a small percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving Norinyl-1 therapy. 10. Because of the occasional occurrence of thrombophlebitis and pulmonary embolism in patients taking oral contraceptives, the physician should be alert to the earliest manifestations of the disease. A cause and effect relationship has not been demonstrated. 11. Because of the effects of estrogens on epiphyseal closure, Norinyl-1 should be used judiciously in young patients in whom bone growth is not complete. 12. The age of the patient constitutes no absolute limiting factor, although treatment with Norinyl-1 may mask the onset of the climacteric. 13. The pathologist should be advised of Norinyl-1 therapy when relevant specimens are submitted.

Side Effects: The following adverse reactions have been observed with varying incidence in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms, breakthrough bleeding, spotting, change in menstrual flow, amenorrhea, edema, chloasma, breast changes (tenderness, enlargement and secretion), loss of scalp hair, change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately postpartum, cholestatic jaundice, erythema multiforme, erythema nodosum, hemorrhagic eruption, migraine, rash (allergic), itching, rise in blood pressure in susceptible individuals, mental depression.

The following occurrences have been observed in users of oral contraceptives. A cause and effect relationship has not been established: thrombophlebitis, pulmonary embolism, neurooocular lesions.

The following laboratory results may be altered by the use of oral contraceptive creased bromsulphalein retention and hepatic function tests, coagulation test crease in prothrombin, factors VII, VIII, I X), thyroid function (increase in PBI and nol extractable protein-bound iodine ar crease in T^3 values), metapyrone test, prec diol determination.

Other side effects reported to have occ in association with use of this drug are ness, hirsutism, pains in legs, back, ches abdomen, dysuria, drowsiness, vagina charge, libido increased and decreased, tions, hypermenorrhea, hypomeno increased appetite, G.U. infections, va veins, abdominal fullness, acne, hea nervousness, allergies, blurred vision, p eyes, and itching in eyes. *For complete cl data, see package insert.*

Dosage and Administration: 1. One tab Norinyl-1 is administered orally for 20 beginning on day 5 of the menstrual (Count day 1 of the cycle as the first d menstrual bleeding.) Repeat this dosage ule for each cycle. 2. If no menstrual occurs after a cycle of treatment (20 tabl which patient adhered to the schedule, t tient must be instructed to resume takin Norinyl-1 tablets 7 days after the previc day course was completed. For example, last pill of a previous cycle had been tak a Sunday, then a new cycle of treatment begin on the following Sunday. 3. In th partum woman, it is recommended th first cycle of treatment should begin on of the first menstrual cycle. However, No should not be administered during lactati

Availability: Norinyl-1 (norethindrone with mestranol 0.05 mg.)—Dispensers of 60 and bottles of 250 tablets.

norethindrone — an original steroid from

SYNTEX

LABORATORIES INC., PALO ALTO, CALIF.

A Building Block approach to treating hypertension

With these three therapeutic building blocks you can create a once-a-day regimen to fit almost any degree of hypertension. See the following pages for details . . .



Consider starting your hypertensives on this basic thiazide

ABBOTT

A single daily dose of Enduron provides sodium excretion around the clock

Enduron is a true 24-hour single-dose thiazide. Its sodium excretion is not squeezed into an abrupt peak during the first several hours. It is well-sustained in a plateau-like effect—with little reduction for the first 12 hours, and decline thereafter only gradual.

Potassium loss, by contrast, is low. It reaches an early minor peak, then subsides rapidly. Moreover, since dosage is but once a day, there is but one daily peak of potassium loss. As with all thiazides, however, dietary potassium supplementation should also be considered, especially in long or intensive therapy.

Use Enduron as an ideal starting therapy in mild hypertension. Use it too, as a basic therapeutic building block with which other agents can be joined, for managing your more resistant hypertensives.

Once a day, every day

ENDURON®
METHYCLOTHIAZIDE



DAILY DOSAGE RANGE	Minimum	Usual	Intermediate	Maximum
	2.5 mg. tablet	5 mg. tablet	7.5 mg.	10 mg.

See Brief Summary on final page of advertisement.

To build added response, shift to Enduronyl

ABBOTT

The deserpidine component adds enhanced antihypertensive activity

The rauwolfia component of Enduronyl is deserpidine (Harmonyl®), a purified crystalline alkaloid supplied only by Abbott. It augments Enduron with its own antihypertensive and tranquilizing action.

Thus the combined clinical effect of these two therapeutic building blocks in Enduronyl is greater than can ordinarily be achieved with either alone.

To add flexibility, Enduronyl comes in two strengths: regular and Forte. Both provide 5 mg. of Enduron. The variation is where most helpful: in the deserpidine. The tablets are scored, and give a surprisingly wide and economical choice of once-a-day doses (see below).

Choose Enduronyl for your patients in the broad range of mild to moderate hypertension. Patient acceptance is excellent!



Once a day, every day

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METHYCLOTHIAZIDE 5 MG. WITH DESERPIDINE 0.25 MG.

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DAILY DOSAGE RANGE	2.5 mg. methyclothiazide 0.125 mg. deserpidine	5 mg. methyclothiazide 0.25 mg. deserpidine	7.5 mg. methyclothiazide 0.375 mg. deserpidine	10 mg. methyclothiazide 0.5 mg. deserpidine
DAILY DOSAGE RANGE	2.5 mg. methyclothiazide 0.25 mg. deserpidine	5 mg. methyclothiazide 0.5 mg. deserpidine	7.5 mg. methyclothiazide 0.75 mg. deserpidine	10 mg. methyclothiazide 1 mg. deserpidine

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Eutonyl affords a different kind of basic therapy for moderate to severe cases

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Effect tied to reduced peripheral vascular resistance; no central depressant action

Eutonyl is a unique nonhydrazine agent. It is reported to act by reducing peripheral vascular resistance.[1,2]

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PARGYLINE HYDROCHLORIDE



DAILY DOSAGE RANGE	Minimum	Usual starting	Intermediate	Maximum
	10 mg. tablet	25 mg. tablet	50 mg. tablet or as needed	200 mg.

1. Brest, A. N., et al., Cardiac and Renal Hemodynamic Response to Pargyline, Ann. N. Y. Acad. Sci., 107-1016, 1963.
2. Winsor, T., Pargyline Hydrochloride, Hypertension, Urinary Tryptamine, and Vascular Reflexes, Geriatrics, 19:598, Aug., 1964.

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Eutron adds thiazide for enhanced therapy with milder side effects

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Only a 7/4 mm. span between standing and recumbent pressures in clinical trials—reduced chance of orthostatic hypotension

The combining of Eutonyl and Enduron in Eutron permits a significantly greater antihypertensive effect than with either agent used alone. This in turn may allow therapeutic success with lesser dosage—and correspondingly milder side effects.

A significant finding in clinical trials was the drug's action in lowering blood pressure to *nearly equal levels in all body positions*. Total average spread between standing and recumbent readings (after treatment) was only 7/4 mm. Hg.

Thus, in your moderate to severe cases, Eutron affords a usually smooth course of therapy, often with reduced likelihood of orthostatic effects. (The usual precautions against rising suddenly, of course, will always apply.) And, because of the thiazide component, Eutron may be used in the presence of congestive heart failure.





Once a day, every day

EUTRON™

PARGYLINE HYDROCHLORIDE 25 MG.
WITH METHYCLOTHIAZIDE 5 MG.

	Minimum	Usual starting	Intermediate	Maximum
DAILY DOSAGE RANGE	12.5 mg. pargyline hydrochloride and 2.5 mg. methyclothiazide	25 mg. pargyline hydrochloride and 5 mg. methyclothiazide	37.5 mg. pargyline hydrochloride and 7.5 mg. methyclothiazide	50 mg. pargyline hydrochloride and 10 mg. methyclothiazide

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METHYCLOTHIAZIDE

Each tablet contains
Methyclothiazide 5 mg. with
Deserpidine 0.25 mg. or 0.5 mg.

Indications: Enduron is used to control edema and mild to moderate hypertension; also used with other drugs for hypertension. Enduronyl is used in mild to moderately severe hypertension; when used with Enduronyl, more potent agents can be given at reduced dosage to minimize undesirable side effects.

Contraindications: Neither Enduron nor Enduronyl should be used in severe renal disease (except nephrosis) or shutdown; in severe hepatic disease or impending hepatic coma; in patients sensitive to thiazides. Hepatic coma has been reported as a result of hypokalemia in patients receiving thiazides.

Enduronyl is contraindicated in patients with severe mental depression and suicidal tendencies, active peptic ulcer, or ulcerative colitis.

Warnings: Consider possible sensitivity reactions in patients with a history of allergy or asthma. If added potassium intake is indicated, dietary supplementation is recommended. Enteric-coated potassium tablets should be reserved for cautious use only when adequate dietary supplementation is not practical because those tablets may induce serious or fatal small bowel lesions consisting of stenosis with or without ulceration. These small bowel lesions have caused obstruction, hemorrhage and perforation frequently requiring surgery. Medication should be discontinued immediately if abdominal pain, distension, nausea, vomiting or GI bleeding occurs.

Precautions: Use thiazides with caution in severe renal dysfunction, impaired hepatic function, or progressive liver disease. In surgical patients, thiazides may reduce the response to vasopressors and increase the response to tubocurarine. Use thiazides with caution in pregnancy (bone marrow depression, thrombocytopenia, or altered carbohydrate metabolism have been reported in certain newborn infants). Also reported have been: blood dyscrasias including thrombocytopenia with purpura, agranulocytosis and aplastic anemia; elevations of BUN, serum uric acid, or blood sugar. Symptomatic gout may be induced. Antihypertensive response may be enhanced following sympathectomy.

Use Enduronyl with caution in patients with a history of peptic ulcer, as rauwolfias may increase gastric secretion. Discontinue at the first sign of mental depression. Rauwolfia alkaloids may increase hypotensive effects of surgery or anesthesia, and should be discontinued two weeks prior. They also lower the convulsive threshold and shorten seizure latency. In epilepsy, dosage adjustment of anticonvulsant medication may be necessary. Alcohol, barbiturates, or narcotics may potentiate action of deserpidine.

Adverse Reactions: During intensive or prolonged therapy, guard against hypochloremic alkalosis and hypokalemia (especially the latter if patient is on digitalis). All patients should be observed for signs of hyponatremia ("low-salt" syndrome). Reported thiazide reactions include: anorexia, nausea, vomiting, diarrhea, headache, skin rash, dizziness, paresthesia, weakness, photosensitivity, jaundice, and pancreatitis.

Reported rauwolfia reactions include: nasal stuffiness, nausea, weight gain, diarrhea, aggravation of peptic ulcer, epistaxis, skin eruption, and reduction of libido and potency. Excessive drowsiness, fatigue, weakness, and nightmares may signal early signs of mental depression.

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PARGYLINE HYDROCHLORIDE

Each tablet contains
Pargyline Hydrochloride 25 mg.
with Methyclothiazide 5 mg.

Indications: For treatment of patients with moderate to severe hypertension, especially those with severe diastolic hypertension. Not recommended for patients with mild or labile hypertension amenable to therapy with sedatives and/or thiazide diuretics alone. It is desirable to establish the dosage of Eutron by administering component drugs separately.

TM-Trademark.

Contraindications: Pheochromocytoma, advanced renal disease, increasing renal dysfunction, paranoid schizophrenia and hyperthyroidism. Hepatic coma has been reported as consequence of hypokalemia with thiazide therapy. Until further experience is gained not recommended for patients with malignant hypertension, children under 12, or pregnant patients.

Concomitant use of the following is contraindicated: other monoamine oxidase inhibitors; parenteral forms of reserpine or guanethidine; sympathomimetic drugs; foods high in tyramine such as cheese; imipramine and amitriptyline, or similar antidepressants; methyldopa. 2 week interval should separate therapy and use of these agents.

Methyclothiazide is contraindicated in patients with known sensitivity to thiazides.

Warnings: Pargyline hydrochloride is a monoamine oxidase inhibitor. Warn patients against eating cheese, and using alcohol, proprietary drugs or other medication without the knowledge of the physician. When indicated, alcohol, narcotics (meperidine should be avoided), antihistamines, barbiturates, chloral hydrate, and other hypnotics, sedatives, tranquilizers, or caffeine, may be used cautiously in reduced dosage. In emergency surgery ¼ to ⅕ the usual dose of narcotics, analgesics, and other premedications should be used avoiding parenteral administration where possible. Carefully adjust dose of anesthetics to response of patient. Withdraw pargyline two weeks before elective surgery.

Warn patients about the possibility of postural hypotension. Those with angina or coronary artery disease should not increase physical activity with an improvement in well being. Pargyline may lower blood sugar.

Avoid use of enteric-coated potassium tablets, as these may induce serious or fatal small-bowel lesions consisting of stenosis with or without ulceration. These small-bowel lesions have caused obstruction, hemorrhage and perforation frequently requiring surgery. Medication should be discontinued immediately if abdominal pain, distension, nausea, vomiting or GI bleeding occurs. These products contain no added potassium salts and if added potassium intake is desired, dietary supplementation is recommended. Coated potassium tablets should be reserved for cautious use when adequate dietary supplementation is impractical. In patients with a history of allergy or asthma the possibility of sensitivity reactions should be considered.

Precautions: Measure blood pressure while patient is standing to determine antihypertensive effect. Use with caution in hyperactive or hyperexcitable persons. Such persons may show increased restlessness and agitation. Withdraw drug during acute febrile illness. Watch patients with impaired renal function for increasing drug effects or elevation of BUN and other evidence of progressive renal failure; withdraw drug if such alterations persist and progress. Use with caution in patients with liver disease. As with all new drugs, complete blood counts, urinalyses, and liver function tests should be performed periodically. With prolonged therapy, examine patients for change in color perception, visual fields and fundi. Also reported have been: blood dyscrasias including thrombocytopenia with purpura, agranulocytosis and aplastic anemia; elevations of BUN, serum uric acid, or blood sugar. Symptomatic gout may be induced. In surgical patients thiazides may reduce response to vasopressors and increase response to tubocurarine.

Adverse Reactions: Pargyline may be associated with orthostatic hypotension. Mild constipation, slight edema, dry mouth, sweating, increased appetite, arthralgia, nausea and vomiting, headache, insomnia, difficulty in micturition, nightmares, impotence, delayed ejaculation, rash, and purpura have been encountered with pargyline. Hyperexcitability, increased neuromuscular activity (muscle twitching) and other extrapyramidal symptoms have been reported in a few patients with reduced cardiac reserve.

During intensive or prolonged therapy, guard against hypochloremic alkalosis and hypokalemia (especially the latter if patient is on digitalis). Observe all patients for signs of hyponatremia ("low salt" syndrome).

Reported thiazide reactions also include anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, and pancreatitis. Nocturia has been observed with the combination.

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Prescribe PARAFON FORTE for lasting spasmolysis and analgesia in sprains, strains, myalgias, low back pain, bursitis and other musculoskeletal disorders. Your patients will appreciate the restored comfort and lasting freedom of movement it usually provides.

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References: 1. Batterman, R. C., and Grossman, A. J.: Fed. Proc. *14*:316, 1955. 2. Goodman, L. S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 3, New York, The Macmillan Company, 1965, p. 331. 3. Roth, J. L. A., *et al.*: Gastroenterology *44*:146, 1963. 4. Conney, A. H., and Burns, J. J.: J. Pharmacol. Exp. Ther. *128*:340, 1960. 5. Settel, E.: Clin. Med. *6*:1373, 1959. 6. Berman, H. H., *et al.*: Dis. Nerv. Syst. *25*:430, 1964. 7. Darienzo, C.: Ibid., *27*:189, 1966.

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Sternal Fractures Secondary to Seat Belt Injury:

Price For Survival

Robert P. Andrews, M.D.* and Robert E. McAfee, M.D.**

Introduction

Though an impressive body of knowledge regarding seat belt safety is available, statistics show that in Maine, more than half of those who have seat belts installed are not wearing them when an accident occurs.[19] This is ample testimony that complete popular acceptance of seat belts is as yet lacking. If benefit is to be attained from seat belts, factual information regarding their value should be presented to the medical profession and all automobile passengers.

A recent seat belt injury of an uncommon type which is likely to be seen increasingly in the future was the stimulus to assemble the available facts on this subject. It is no longer meaningful to proclaim "Slow Down and Live" as many fatal injury-producing accidents occur unrelated to excessive speed. Accidents cannot be completely eliminated and so the approach must be to "crash-proof"[1] our vehicles, build safety into our roads, and encourage defensive driving.[20] The risks of driving on our highways will be present as long as people continue to use them to travel which extends into the foreseeable future.

Case Presentation

E. P. MMC #48337 and S. P. MMC #48345 were driving one afternoon in a late model Volkswagen sedan. Both had diagonal type combination lapshoulder seat belts installed and in place. Two children were seated in the rear seat without seat belts. While traveling at approximately 40 miles/hour the Volkswagen was in front end collision with the lateral rear wheel of a large panel truck (Fig. 1). Both the driver and the right seat passenger sustained chest injuries, but neither patient contacted the windshield. The children were catapulted forward into the front seat.

The driver sustained a fractured sternum and fractured first left rib with a pneumothorax from the restraining effect of the seat belt. In addition, an undisplaced fracture of the left ankle was sustained by this patient. The passenger, his wife, also sustained a fractured sternum (Fig. 2) as well as a right brachial plexus injury and a hematoma of the left breast, also from the restraining effect of the seat belt. Neither passenger contacted dashboard or windshield. One child sustained multiple facial bruises and a second sustained a fracture of the mandible which required surgical repair.

Treatment consisted of re-expansion of the left pneumothorax of the driver and symptomatic treatment of the front seat passenger. A walking cast was required on the driver's left ankle. Both were discharged from the hospital within five days and have had no significant sequellae as the result of their injuries.

The rarity of isolated sternal fracture in a traumatic situation is well known. It is rare in patients who sustain fatal chest trauma in auto accidents when they are unprotected by seat belts. Sternal fracture is very uncommon even when vigorous resuscitative measures are carried out, although rib fractures are not unusual. The amount of restraining force transmitted to the sternal region in these patients is calculated to be approximately 1000 lb. per square inch, so that this type of injury may become more common in the future.

Basic Data

The invaluable work done by the Automotive Crash Injury Research Project of Cornell University, Aerospace Medical Pioneer Colonel P. John Stapp of the Armed Forces Institute of Pathology with crash sled experiments, and the Institute of Transportation and Traffic Engineering at the University of California in Los Angeles in the basis for much of the factual information regarding collision trauma. Since 1899, when the first auto fatality occurred, a total of more than 1.5 million people have been killed in motor crashes. At the present rate one of every three of the 75 million autos on the

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road will be involved in an accident in its lifetime and one in 25 will involve a fatality.[1] Less widely publicized than the more than 50 thousand annual deaths are the ubiquitous 4 to 5 million annual crash injuries which result in staggering personal and economic losses to auto occupants and the community.

Of critical importance is how great an impact the human being can tolerate and expect to survive. Colonel Stapp has shown that a healthy male can tolerate a force of 50 times that of gravity without untoward effects. He rode a 632 mile per hour sled which was stopped in 1.4 seconds in order to personally prove this fact. The effective weight with which passengers hit any structure of the car interior is measured by the equation: $G = \frac{mph^2}{30 \times \text{Stopping Distance in Feet}}$. Translated into a front end collision at 40 miles an hour such as described above, this means that a 150 pound passenger would have been hurled against the windshield and dashboard with an impact of 15 times the force of gravity, or with a weight of more than one ton without a seat belt.

The many causes of auto accidents include rain, snow, fog, slippery roads, unexpected turns, steep hills, fatigue, road hypnosis, momentary inattention, tire blowout, unexpected maneuver by another auto or pedestrian, sudden stop by another auto, a weaving drunken driver, a roadhog weaving in and out of traffic, a foot misplaced on accelerator instead of brake, or a faulty windshield wiper. The list could also include other causes such as mechanical failure, a child in the car requiring the attention of the driver, physical failure of the driver or poor eyesight. And still the list would not be complete.

Accidents can be subdivided into the following categories: 30% are front or front-rear, 20% are roll over and the remaining 50% are angled or lateral with regard to type of impact.[2] In a very small percentage of accidents fire or immersion are involved, and of course, the less severely injured passengers in these situations have the best chance of escape and survival.

Inside the passenger compartment of the auto which crashes, only milliseconds pass before a second crash occurs between the occupants and the inside surfaces of the vehicle. The motion of the occupant is violently upward and forward in a front end collision. The first movement is a forward slide during which the knees of the front seat occupants strike or go beneath the dashboard resulting in a compression load on the femoral shaft and hip joint. This produces knee injuries, femoral shaft fractures and fracture dislocations of the hip. When the knees collide with or slide under the dash they act as levers which aid in the upward projection of the body. The head then collides with the roof, windshield, rear view mirror or any other internal projection in its path. There is a final phase of body movement which is one of momentary recoil followed quickly by further forward movement and the head, now lower, is thrown against the windshield and the driver's chest makes contact with the steering wheel. Rear seat passengers commonly are re-





Fig. 1. Appearance of auto after collision (Front and Lateral Views).

turned to the rear seat fractions of seconds after violent forward and upward movement having struck that part of the auto which lies in front of them as well as the roof.

It is because of these facts that so much Federal and private effort has been turned towards crash proofing the auto interior with such devices as padded dashboards, recessed control knobs and instruments, impact absorbing steering wheels, a collapsible steering column, more flexible safety glass, safer and stronger door locks, dual braking systems, headrests and safer tires. In such an injury-proofed auto, engineers insist that an occupant, properly restrained by a lap or chest belt, should walk away unharmed after a head-on collision at 30 to 40 miles per hour in which no severe compression of the passenger compartment occurs. Better constructed auto bodies equipped with roll bars and braced to prevent

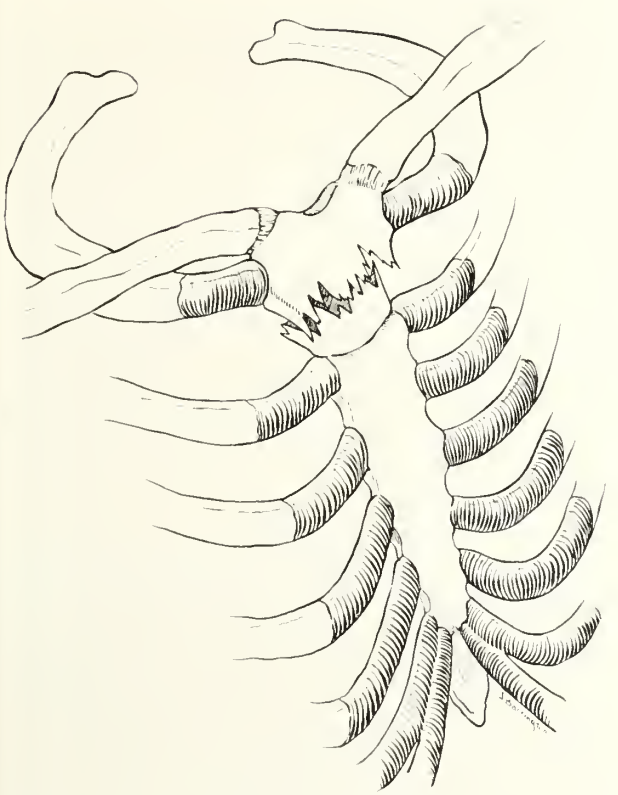


Fig. 2. Artists' Conception of Sternal Fracture (X-Rays Reproduce Poorly).

crumpling, construction with an inclined fire wall to direct the engine downward on impact, non-locking brakes, and extensive interior padding with energy absorbing materials, will cut down on the likelihood of fatality as well. This is particularly important with respect to head injuries which are responsible for 70 to 80% of all crash fatalities.[1,14]

The single most important requirement to lessen injury in traffic accidents is to prevent the secondary collision within the auto. This can be greatly enhanced if auto occupants wear seat belts. Since any auto on the road today can have a seat belt installed, one does not need to wait and buy a new auto conforming to government standards to obtain this protection.

There are four basic seat belt types available, all of which must be firmly attached to the auto framing in order to be effective.[3] It must be remembered that even a snug seat belt can allow 10 to 20 cm of forward motion while becoming taut.[8]

Four common types of seat belts are illustrated in Fig. 3 and have the following characteristics:

Type One: The Lap Belt – This is the most popular design in the United States but has the disadvantage that a clasp-knife action of the body takes place on impact allowing the chest and head to collide with interior projections.

Type Two: Diagonal Belt – This belt offers satisfactory protection, but there is danger that the occupant will

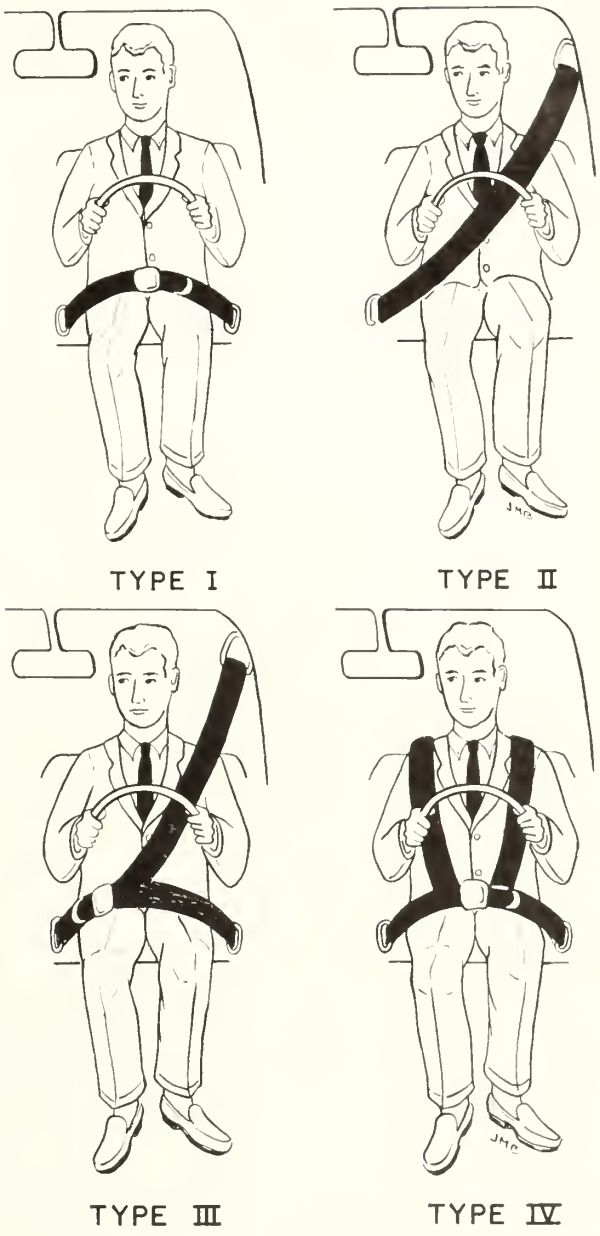


Fig. 3

slide under the belt during impact. This belt offers the additional danger that it may be improperly worn with the strap under the arm rather than over the shoulder, and no restraint is placed on the pelvis.

Type Three: Three-point Belt – This type of belt is believed by many to be the best available as it offers protection to both lower and upper parts of the body while remaining easy to buckle and allowing relatively free body movement.

Type Four: Shoulder Harness – This type of belt is not popular because it is too difficult to don and restricts body movement. Its main disadvantage lies in the fact that the straps run over the back of the seat to attach to the floor and if the back of the seat gives way, little pro-

tection results. It is presently thought that a safe seat mount can be manufactured, and with attachment of the harness belt to the seat, maximum restraint can be obtained.[22]

No informed person today can doubt the results of several studies,[2,5,6,7,8,9] showing the effectiveness of seat belts. All of these reports reach general agreement that there is a 35% reduction in major fatal injuries by preventing passenger ejection and reducing secondary collisions within the auto. A mortality reduction in the range of 80% has been shown when diagonal belts are used.[7,9] It must be stressed that under certain accident conditions auto injuries are unsurvivable even with the use of seat belts.[10] This is particularly true when the occupant is seated at the site of impact or when the passenger compartment is severely compressed.

Seat Belt Injury: As is clear from the above case presentation, the seat belt itself, even when of the most beneficial type, can produce injury. Injuries due to seat belts include splenic rupture,[11,17] rupture of the pregnant uterus from improperly high placement of the seat belt,[12] ventral hernia of the abdominal wall,[13] fulcrum fractures of the lower spine,[15] small bowel perforation,[16,18] and sternum fractures,[17] facial fractures,[13] pelvis and lower torsal injuries caused by snubbing of the seat belt,[8] and injuries due to seat belt failure.[8] Only one other case of sternal fracture from over-the-shoulder seat belts has appeared in the literature,[17]* and it is hoped that physicians can be made aware of the possibility of this type of injury. In one report, 29 cases of seat belt failure are cited in which the webbing slipped or broke, the belt anchorage broke or the buckle broke.[8] In this group, however, there were only two with severe snubbing injuries and no pelvic or lumbar spine fractures. The inescapable conclusion is that the passenger who sustains an injury secondary to the use of a seat belt is paying a small price, with death as the alternative, if no restraining device is worn at all.

Discussion

The cases presented illustrate an injury that is likely to become more common with the increasing use of seat belts in motor vehicles. Other injuries that occur with seat belts are usually minor as shown in a study which reviewed 944 seat belt-related injuries out of 3,325 vehicle occupants who crashed wearing seat belts.[8] As mentioned above, seat belts will not secure survival in major crashes with severely compressed passenger compartments or in which the rare seat belt failure occurs. The goal is to be as safe as possible while undertaking the risk of travel on our highways. From the facts available it seems that the minimal practical safety equipment in a contemporary vehicle should include a seat belt, properly worn and attached, an energy absorbing steering wheel and steering column, and other now commonly installed safety features such as safety door locks, recessed control knobs, dual braking systems, padded dashboards and low resistance shatterproof glass. Other features urged and endorsed by the Federal Government should include a sturdy roll bar, possibly headrests and interior padding sufficient to protect passengers in crashes producing compartment compression compatible with survival. In short, the average driver has been shown incapable of adequate self-protection and it is physicians particularly who should set an example and urge protective measures. It is already clear that a safe vehicle can be manufactured and sold to the American public. Injuries such as are documented in the case presentations above are far more acceptable than 50,000 deaths a year from motor vehicle accidents.

*Since this report was written, two further cases of sternal fracture have been recorded.[21]

Conclusion

Two cases of fractured sternum in auto passengers wearing three point over-the-shoulder seat belts are presented to increase physician awareness of this injury.

Many facts concerning motor vehicle accidents as well as a discussion centering on available safety measures and the subject of seat belt injury are also presented. Physicians particularly should continue to encourage the use and development of safety equipment and advocate defensive driving practices. Efforts to reduce the awesome annual traffic toll of fatal and disabling injuries can only be considered an additional medical responsibility to our patients which we are singularly well equipped to discharge.

References

1. Fighting Death on Wheels, Roche Medical Image, 66-10, Fall 1966.
2. Frazier, E. G., Effectiveness of Seat Belts in Preventing Motor Vehicle Injuries, N.E.J.M. 264:1254-1256, 1961.
3. Bourke, G. J., The Efficacy of Car Safety Belts, Jorn. Irish Med. Assm: 57, 110, 1965.
4. Gissame, W. Lancet, 2, 695, Cited by Bourke, G. J. (Reference 3).
5. Lindgren, S. and Warg, E. (1962); Moreland, J. D. (1962); Tourin, B., and Garrett, J. W. (1960), cited by Bourke, G. J. (Reference 3).
6. Gikas, P. W. and Huelke, D. P. Causes of Death in Automobile Accidents, Can Seat Belts Really Save Lives?, J. Mich. State Med. Soc. 63:351, 1964.
7. Lister, R. O., and Milsom, B. M., Car Seat Belts, The Practitioner 191:332-340, Sept. 1963.
8. Garrett, J. W. and Braunstein, P. W., The Seat Belt Syndrome, Jour. Trauma 2:220, May 1962.
9. Herbert, D. C., Med. J. Aust. 1:61, 1964.
10. Campbell, H. E., Thirty-Three Fatal Crashes With Seat Belts, Rocky Mt. Med. Jour., 27-29, Aug. 1964.
11. Cocke, W. M. and Meyer, K. K., Splenic Rupture Due to Improper Placement of Auto Safety Belt, JAMA 183, 693, 1963.
12. Rubovits, F. E., Traumatic Rupture of the Pregnant Uterus From Seat Belt Injury, Am. J. Obst. and Gynec. 90, 828-829, 1964.
13. Hurwitt, E. S., and Silver, C. E., Seat-Belt Hernia, JAMA, 194:239-241, 1965.
14. Perry, J. F., Jr., and McClellan, R. J., Autopsy Findings Following Traffic Accidents, Surg. Gyn Obst 119: 586-590, 1964.

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Management of Acute Leukemia in Adults with Combination Drug Therapy

A Preliminary Report

MURRILL M. SZUCS, JR., M.D.* and LOUIS G. BOVE, M.D.**

Of the many hopeless situations which confront the physician, the management of an adult with acute leukemia is certainly one of the more difficult. Previously felt to be uncommon, acute leukemia in the adult seems to be on the increase. Recent advances have been made in the therapy of acute leukemia of children, but for the adult, little true progress has been forthcoming. We are most interested in finding a program which will increase the incidence of remissions so that we could extend the patient's useful span, for himself and for his family. The results of therapy for acute leukemia in the adult had been so poor, that a majority of clinics began to use combination drug programs in the management of this disease. Our experience was similar, so in July, 1966, we began a three-year study program to investigate combination drug therapy. After one year, during which nine patients were treated, our results were such that a preliminary report seemed worthwhile.

The incidence of remissions in the adult with acute leukemia prior to 1960 in the majority of clinics barely exceeded 10-15%. At that time, certain events occurred which resulted in the current trend toward combination drug therapy; newer agents became available, and many independent investigators showed that the combination of drugs gave better results than any single drug alone. The remission rate of certain types of adult leukemia is now approaching 40-50%.

In 1964 Freireich et al[1] reported on the use of combination therapy in the treatment of childhood acute leukemias, using Vincristine, Amethopterin, 6 Mercaptopurine, and Prednisone simultaneously (VAMP Program.) Their original program was modified by others and the program we selected was that of Thompson, Hall and Maloney[2] as presented in 1965. We were impressed by their high incidence of remissions and the relatively mild toxic effects. Aware of the controversy in the use of cortico-steriods in the therapy of some types of acute leukemia, it was decided to treat all cell types alike.

MATERIALS AND METHODS

All patients on the Medical Service of the Maine Medical Center and all private patients with acute leukemia, belonging to one of us, were included. There were nine patients during the first year, four service and five private, coming from several locations throughout the State of Maine. The original diagnosis was based on peripheral blood smears and bone marrow morphology. All but one patient was managed individually by one of us, although follow-up care was more often carried on by the patient's private physician.

DRUGS

Vincristine Sulfate is a periwinkle alkaloid derived from the plant, Vinca Rosea. Originally investigated for its hypoglycemic effects, it was found also to have an anti-leukemic effect in animals and man.[3] Although the exact mechanism of action is unknown, it has been shown to produce "metaphase arrest" in marrow cells (Fig. 1) presumably damaging spindle development of dividing cells.[4] The dose was 20-30 gamma per kilo per week, given intravenously. The usual dose given was 1.2 mg. – 1.5 mg. once weekly, administered intravenously. Side effects include paresthesias, constipation and phlebitis.

Amethopterin (methotrexate) is an antifolate that inhibits dihydrofolate reductase, an enzyme essential to the biosynthesis of thymidilate, which leads to cell death. This mechanism is also responsible for the main side effects which are marrow depression, alopecia, and ulcers of the mucous membranes of the oral cavity[5] and gastrointestinal tract. The usual dose given was 2.5 mgms, orally each day. Recent experience suggests that mucous membrane toxicity may be reduced if the drug is given parenterally bi-weekly, 20 mg./sq. meter I.V. twice weekly (20-30 mgs.).

6-Mercapto-purine is an antipurine agent that inhibits the synthesis of adenylic and guanylic acids and suppresses the denovo biosynthesis of purines. This leads to alteration of RNA and DNA synthesis.[6] The main side effects include marrow depression, nausea and vomiting. The dose is 2.5-4 mgm. per kilo daily by mouth. The usual dose given was 50 mgms. 2x daily.

Prednisone is used mainly for its ability to lyse lymphoid cells. Its exact biochemical effect on leukemic cells is not known at the present time, but there is some indication that it may have a specific anti-tumor effect. It also plays a role in decreasing the bleeding tendency associated with thrombocytopenia by increasing capillary resistance without necessarily causing an increase in the platelet count. Side effects from cortico-steroids are many

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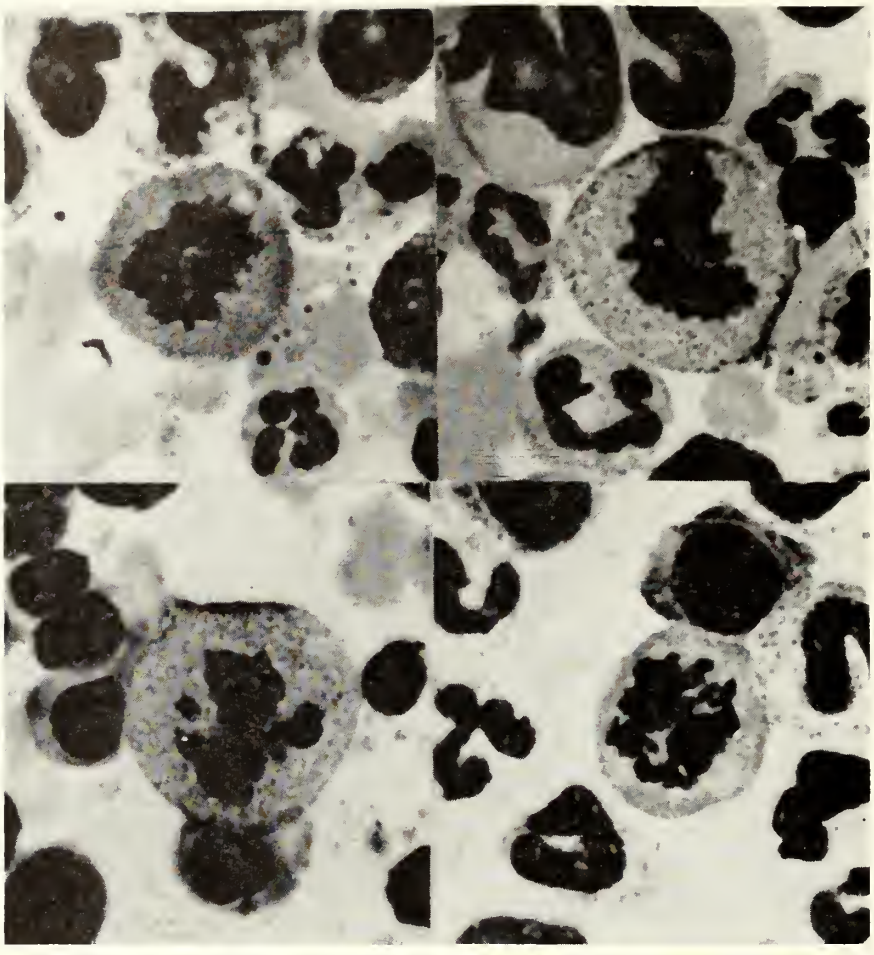


Fig. 1. Four arrested mitosis in a bone marrow aspirate from a case of acute myelogenous leukemia after treatment. (X2000)

and well known. It was given orally in a dose of 60 mgms. daily in divided doses with an antacid.

The four drugs were started simultaneously as soon as the diagnosis was established and continued for at least six weeks or until toxicity appeared. This seemed to be the minimum time needed to produce remissions as noted by Thompson et al[2] and Huguley and associates.[7] When remissions were attained, the first three drugs were stopped and Prednisone gradually decreased over a month's time. No maintenance therapy was used. When relapse occurred, all drugs were instituted in the same doses.

Results

Of the nine patients treated with acute leukemia, five went into complete remission (Table 1); one of these relapsed to respond partially on re-treatment.

Two of the five patients who attained remission had acute myelogenous leukemia, one had acute lymphocytic leukemia, one had acute stem cell leukemia and one had myelomonocytic leukemia of the Naegale type. The median duration from onset of therapy to attainment of remission was 4.5 wks. The median length of remission was 13.5 wks. One patient remained on therapy 12 wks. before going into remission but maintained it for 32 wks. (Fig. 2) and has had no side effects from therapy. The patient with acute lymphocytic leukemia attained initial remission that lasted 8 wks. followed by a relapse: on re-treatment, she had a second partial remission also lasting 4 wks.; however, has since expired due to overwhelming sepsis. One patient with acute myelomonocytic leukemia which rarely responds to treatment, continues to maintain a complete remission after one course of therapy.

Those patients who did not respond for the most part did not receive the full 6 wk. courses of drug therapy. (Table 2) L. M., a 75 year old man, who had chronic granulocytic leukemia with a blast crisis and did not respond. C. S., a 64 year old female with acute myelogenous leukemia had a slight improvement after 6 wks. of therapy, but has done poorly and therapy had to be discontinued because of severe leukopenia. One patient had a previous diagnosis of lymphosarcoma, but presented as an acute lymphocytic type.

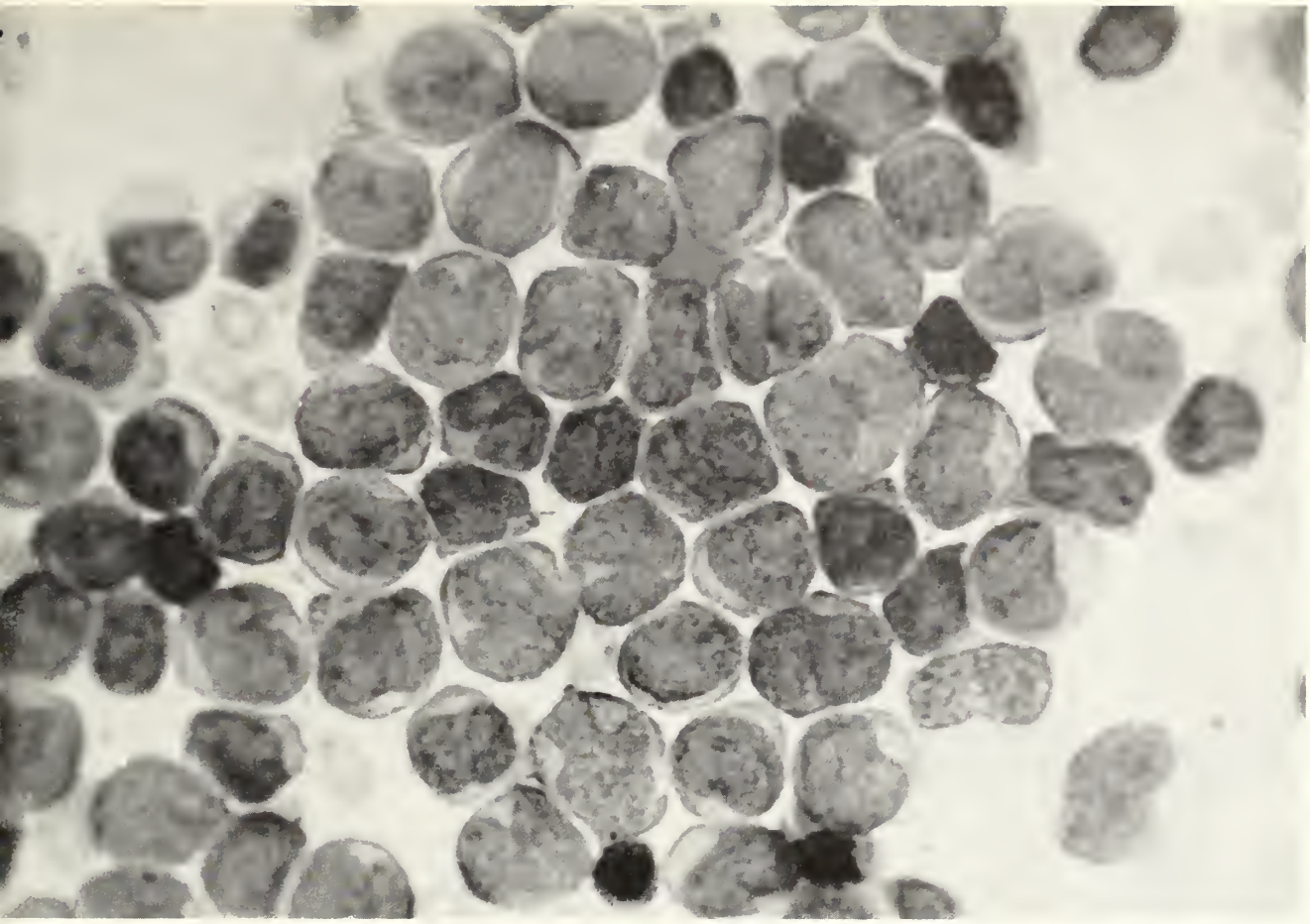


Fig. 2a. Bone marrow preparation from a case of acute myelogenous leukemia before treatment, showing a sheet of immature blast forms. (X1600)

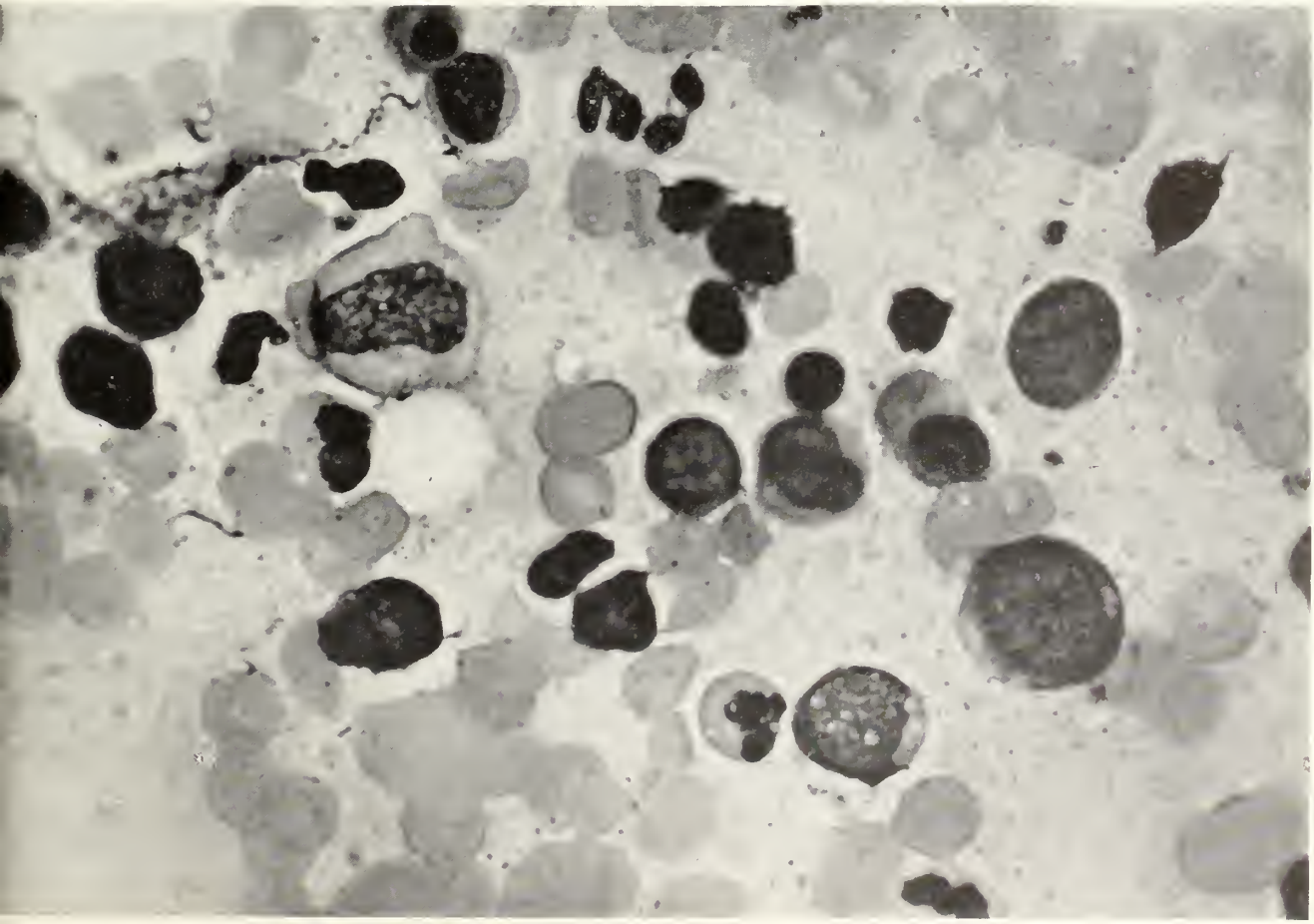


Fig. 2b. Bone marrow from the same case after 4 weeks of therapy. Note reduction of blast forms. (X1600)

TABLE 1

PATIENTS RESPONDING TO THERAPY

Patient	*Age (yrs.)*	*Sex*	*Cell type*	*Initial WBC ($x10^3$)*	*Duration of Rx. before remission occurred (wks.)*	*Duration of remission (wks.) Type of Remission**	*Drug Complications*
A.L.	25	F	A.M.L.	173.3	3	6** (I)	leukopenia paresthesias
M.M.	57	F	A.L.L.	5.0	6	8 (I)	leukopenia paresthesias
					4	4 (II)	mouth ulcerations leukopenia paresthesias mouth ulcerations sepsis - death
E.D.	75	F	Acute myelomonocytic (Naegeli type)	20.0	6	26** (I)	leukopenia paresthesias mouth ulcerations alopecia
A.B.	35	M	A.M.L.	4.7	12	32 (I)	none
N.P.	27	F	Acute stem cell	4.4	4	6** (I)	none

*Based on leukemia Group B Criteria[10] (I complete remission

**Remission continues of this writing (II partial remission

TABLE 2

PATIENTS NOT RESPONDING TO THERAPY

Patient	*Age*	*Sex*	*Cell type*	*Initial WBC $x10^3$*	*Duration of therapy wks. Type of remission**	*Cause of death*
C.S.	64	F	A.M.L.	17.0	6 III	—
E.M.	75	M	C.G.L. (blast crisis)	7.0	1	massive G.I. hemorrhage
P.O.	67	F	A.M.L.	67.0	0	pneumonia
D.R.	65	M	A.L.L. (previous lymphosarcoma)	50.00	4	sepsis

*Based on Leukemia Group B Criteria[10] III No response.

Because of drug toxicity (leukopenia), two patients who remitted received less than a 6 wks course plan. The most common toxic complaint was paresthesias secondary to Vincristine, but this did not necessitate termination of the drug. Other side effects from combination treatment in our series were mild and not clinically significant.

DISCUSSION

In 83 cases of adult acute leukemia treated with 6-Mercapto-purine alone, Boggs, Wintrobe and Cartwright[8] reported only 6 remissions (7%) and 11 improvements (13%) and of 17 patients treated with Methotrexate, 2 showed only improvement. In a similar study, The British Research Council[9] reported nine out of 100 (9%) had remissions with 6-Mercapto-purine and Prednisone. The majority in the two preceding studies, who enjoyed remissions had acute lymphocytic leukemia. Those with acute myelogenous leukemia, had a remission rate of about 10-15%. With the application of the VAMP Program to adults with acute leukemia, Thompson et al[2] in their initial 38 patients, reported 10 out of 14 cases of acute myelogenous leukemia, who survived 6 wks. of therapy attained a remission.

Each of the four drugs used in combination therapy have been shown to have independent effects in inducing remissions in acute leukemias. 6 Mercapto-purine and to a lesser extent Methotrexate have been shown to give fairly good remissions; but at such high doses, toxic effects became prohibitive. Therefore, by using four drugs at low doses an additive effect and low toxicity occurs.

Although our series is small, our findings tend to parallel those of others using 4-drug combination therapy. Some authors have stated that the effect of therapy on survival is a function of the frequency and duration of remission, which is primarily a function of the cell type of acute leukemia. This is not necessarily true as applied to the present program, as more patients with acute leukemia are going into remission and it would appear to be a function of a change in therapy.

The incidence of complications from drug therapy

were low. Although toxicity seems to vary from patient to patient; it is also dose related. The drug doses when used in combination are lower than those used singularly with a resultant few side effects. Leukopenia was a frequent side effect but returned to normal when drugs were discontinued. One patient, E. M., with acute lymphocytic leukemia died of overwhelming sepsis, but this was probably a complication of her disease and not leukopenia. Therapy had to be discontinued in only two patients because of drug complications. Huguley et al[7] using bi-weekly doses of Methotrexate I.V., reported a 33% remission rate in adult leukemia, but his side effects were frequent.

Morbidity and mortality in acute leukemia are related, not so much to the presence of abnormal cells but to the absence of normal ones. The goal of chemotherapy is the induction of and maintenance of a remission. A definite length of time on therapy is necessary to achieve this remission. If however, drug therapy must be stopped short because of drug toxicity, there may be a lessening of the patient's chance to obtain such a remission.

The goals in the management of the patient with acute leukemia include patient comfort, a minimized hospitalization time, low incidence of side effects with drug therapy, and the reduction of abnormal cell populations. It would appear that these goals are satisfied by the use of combination therapy.

Conclusions

1. Nine patients were treated with combination drug therapy (VAMP).
2. Of the nine patients treated, regardless of cell type, five patients had remissions.
3. There was one patient improved on therapy and three patients who did not respond.
4. The VAMP Program as used is not associated with marked toxicity and does seem to increase the incidence of remission.
5. The mode of drug therapy can be suited for outpatient as well as inpatient management.

Acknowledgment

We wish to thank Dr. Louis Bachrach, Dr. Johan Brouwer, Dr. John B. Madigan and Dr. George W. Bostwick for making follow-up studies available.

References

1. Freireich, E. J., Karon, M., Frei, E., III. Quadruple Combination Therapy (VAMP) for Acute Lymphocytic Leukemia of Childhood. Proc. Am. A. Cancer Research 5:20, 1964.
2. Thompson, E., Hall, T. C., Moloney, W. C. Combination Therapy of Adult Myelogenous Leukemia. N.E.J.M. 24: 1302-1307 (Dec.) 1965.
3. Johnson, I. S., Armstrong, J. G., Gorman, M., Burnett, J. P. Jr. The Vinca Alkaloids; A New Class of Oncolytic Agents. Cancer Res. 23:1390-1427, 1963.
4. Marmont, A. M., Damasio, E. E. The Effects of Two Alkaloids Derived from Vinca Rosea on the Malignant Cells of Hodgkin's Disease, Lymphosarcoma and Acute Leukemia In Viro. Blood 24:1-18, 1967.
5. Bertino, J. R. The Mechanism of Action of Folate Antagonists in Man. Cancer Res. 23:1286-1306, 1963.
6. Goodman, L. S., Gilman, A. The Pharmocological Basis of Therapeutics. The MacMillan Co., N.Y., 3rd ed. 1965.
7. Huguley, C. M., Vogler, W. R., Lea, W., Corley, C. C., Lowery, M. E. Acute Leukemia Treated with Divided Doses of Methotrexate. Arch. Int. Med. 115:23-28, 1965.
8. Boggs, D. R., Wintrobe, M. M., Cartwright, G. E. The Acute Leukemias, An Analysis of 322 Cases and Review of the Literature. Medicine 41:163-225, 1962.
9. The Treatment of Acute Leukemias in Adults; Comparison of Steroid Therapy at high and lose dosage in Conjuction with 6-Mercapto-purine, Medical Research Council Report B.M.G. 1:7-14, 1963.
10. Studies of Sequential and Combination Antimetabolite Therapy in Acute Leukemia: 6-Mercapto-purine and Methotrexate, From the Acute Leukemia Group B. Frei, C. III et al Blood 18:431-454, 1961.

STERNAL FRACTURES SECONDARY TO SEAT BELT INJURY: PRICE FOR SURVIVAL

Continued from Page 190

15. Howland, W. M. et Coll., Fulcrum Fractures of the Lower Spine, JAMA 193, 240, 1961.
16. Tolins, S. H., Unusual Injury Due to Seat Belt, J. Trauma 4, 397-399, 1964.
17. Fisher, P., Injury Produced By Seat Belts, Tour Occup. Med. 211-212, May 1965.
18. Aiken, D. W., Intestinal Perforation & Facial Fractures in an Automobile Accident Victim Wearing a Seat Belt, J. La. St. Med. Soc. 115, 235-237, July 1963.
19. Maine State Police, Bureau of Traffic Records, Personal Communication.
20. Maine Highway Safety Committee, Personal Communication.
21. Fletcher, B. D. & Brogdon, B. C., Seat Belt Fractures of the Spine Sternum, J.A.M.A.: 200, 167-168, April 1967.
22. Dillihunt, R. C., AMA Committee on Medical Aspects of Auto Safety, Personal Communication.

Lipomatosis of the Ileo-Cecal Valve

A Problem In Diagnosis And Treatment

HARRY W. BENNERT, JR., M.D.,* ROBERT P. ANDREWS, M.D.** and JOSEPH E. PORTER, M.D.***

INTRODUCTION

Lipomatosis of the ileo-cecal valve which has also been called ileocecal valve syndrome, hypertrophy of the ileocecal valve, and lipoma of the ileocecal valve is defined as diffuse fatty infiltration of the submucosal layer of the ileocecal valve.[2,3,10] This infiltration of normal fat cells is without a demarcating capsule and therefore is distinguished from a true lipoma. The etiology of this relatively rare lesion is unknown. There have been two proven cases of this disease at the Maine Medical Center in the last thirteen years. Interest in lipomatosis of the ileo-cecal valve arises from the fact that it is a problem in diagnosis, particularly in distinguishing it from malignancy. Therapy when indicated is quite controversial, although it is surgical. The nature of the surgery necessary is in question.

The purpose of this paper is to discuss the disease entity with respect to the problems in differential diagnosis and appropriate treatment and to present the two cases which have been diagnosed and treated at the Maine Medical Center.

CASE REPORTS

Case No. 1, J. B. L., MMC Hospital No. 52690 – This 69-year-old retired engineer entered the hospital with the chief complaint of recurrent right lower quadrant distress, vague in nature and of several months duration. With each bout of abdominal pain, he would experience intermittent constipation. The past medical history was non-contributory. Physical examination revealed an obese but otherwise healthy older male. Barium enemas revealed a "fairly sizeable irregular filling defect in the mid cecum at the approximate level of the ileo-cecal valve." Subsequently, the patient underwent a right colectomy. The specimen contained a fatty ileo-cecal valve, which resembled a "cervix uteri." On microscopic section it was covered by a normal mucosa with some congestion. It contained a small amount of brownish pigment and an increased number of lymphocytes. The submucosa was composed of uniform mature adult fat cells with no capsule. The postoperative course was benign and the patient was discharged on the 10th postoperative day.

Case No. 2, L. E. P., MMC Hospital No. 43721 – This 75-year-old female was admitted with the chief complaint of severe upper abdominal pain penetrating to her mid-back of several hours duration. The pain had come on following a meal which was largely liquid and relatively bland. Associated with the pain had been mild nausea. In the last several months prior to admission, she had noted gradually increasing anorexia, fatigue, and weight loss. The remaining past medical history was non-contributory. Physical examination revealed mild but diffuse upper abdominal tenderness most marked on the right. Bowel sounds were suggestive of small bowel distension and KUB† revealed distended loops of small bowel thought to be secondary to incomplete mechanical obstruction of the right colon. Barium enema revealed a persistent deformity of the cecum. The attending physician felt that the lesion of the cecum was probably benign. At operation the cecum was opened and the fatty and enlarged ileo-cecal valve was visualized and appeared to the surgeon to resemble a "cervix uteri." A total right colectomy was carried out. Grossly and microscopically the lesion appeared as the valve in case number one. (Addendum: This patient underwent cholecystectomy at the same operation.)

DISCUSSION

Anatomically the ileo-cecal valve is composed of two lips which bound a slit-like opening which connects the small with the large intestine. This valve is formed by a reduplication of the mucosa, submucosa, and circular muscle fibers of the intestine.[11]

In the pathological specimen the lips of the lipomatous valve are grossly enlarged and resemble a "cervix uteri."[2] The mucosa is intact but appears yellowish in color. Microscopically, the submucosa is filled with a mass of normal fat cells, lacking a capsule.[10] Frequently, as in the presented cases, the mucosa is involved with a chronic inflammatory infiltrate.

Actual etiology is unknown but Cabaud and Harris[11] suggest that the normal mechanical pulsations of the mucosa and submucosa, as the valve functions, create "a sort of tissue vacuum" that slowly becomes filled with fat. Edwards and Zangara[13] believe the lesion to occur in individuals with faulty fat metabolism.

It is an entity uncommon before the age of 40 and occurs most frequently in women.[2] In a series by Lasser and Rigler[8] only 6 of the 18 patients were men and most of their patients were over age 45. In a study of benign lesions of the cecum by Phillips et al,[12] only 5 of the 27 cases were lipomatous.

Diagnosis can only be proven by actual examination of the specimen.[13] Symptoms and signs are relatively vague and only 50% present with any clinical findings.[4] It is frequently an incidental finding on roentgenologic examination.[2,4]

Symptoms can include gaseous abdominal distension and flatulence, diarrhea or constipation, slight to severe abdominal pain which can be difficult to localize, nausea, vomiting, or crampy pain simulating bowel obstruction. Occasionally a right lower quadrant mass can be palpated and sometimes melena is present.[2,10] It has been

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†Flat Film of Abdomen

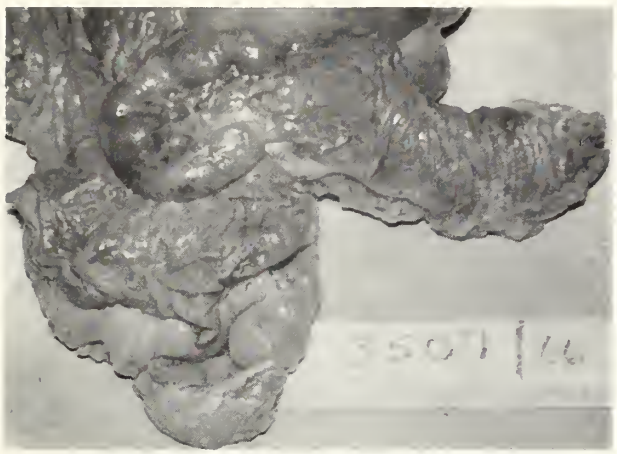


Fig. 1. Gross specimen revealing lipomatous valve.

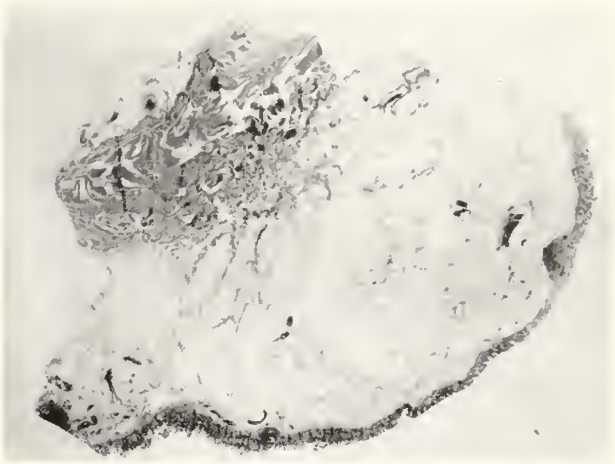


Fig. 2. Histologic study reveals mature fat cells in lipomatous valve.

confused with acute appendicitis[4] and may present as postprandial "indigestion" simulating biliary disease.[3] Seabrook et al[14] indicate that lipomatosis can give rise to exsanguinating hemorrhages from mucosal ulceration. Balaz et al[15] suggest that symptoms must be differentiated from diseases of the ureter, fallopian tube and ovary. Intussusception can result when lipomatosis is present according to Kelby.[4]

The anatomy of the ileo-cecal valve is best appreciated roentgenologically, when during the course of a barium enema examination, spot films are made while compressing the cecum. These films are made by applying pressure to the ileo-cecum with a radiolucent compression cone available on the standard fluoroscope. The valve itself is most easily recognized if barium enters the terminal ileum, but this is not a prerequisite.[5]

The usual ileocecum is formed by the terminal ileum which rises out of the pelvis and forms a reverse curve joining the colon medially at a right angle with the valve projecting slightly inward. The junction may be anteromedial or posteromedial in location, but lateral entry is considered outside normal variation.[7] The most common location, posteromedial, is seen in 90% of patients.[1]

The ileocecal valve has an upper and lower lip, both of which can be identified roentgenologically. The longer upper lip averages 2.0 cm. in length while the shorter lower lip usually measures 0.3 cm. to 0.5 cm. Anterior and posterior to the valve, there is a frenulum which marks the anatomic boundary between cecum and ascending colon, but which is not usually demonstrable roentgenologically. Many variations can occur, including absence of projecting valve lips, prolapse of the lower lip into the terminal ileum,[17] and fusion of the inferior ileal wall and medial cecal wall causing an unusual appearance of the valve.

When lipomatosis of the ileo-cecal valve is present, a circular tumor-like filling defect is present in the colon at the entrance of the terminal ileum. An actual herniation of ileal mucosa, or protrusion of mucosa beyond the lips of the valve can present an identical appearance.



Fig. 3. Normal compression spot film of ileocecal valve.
UL-upper lip LL-lower lip O-orifice



Fig. 4. Compression film of lipomatous valve with arrows to indicate borders.

Indeed, this latter finding is analagous to the gastric mucosal prolapse commonly seen at the pylorus as a variation of normal.

In the presence of a lipomatous valve, it is occasionally possible to discern increased radiolucency of the filling defect in the cecum due to the fatty tissue present. Differentiation from malignant tumor is of paramount importance and may be obtained roentgenologically. The intimate relationship of the filling defect to the location of the valve is a main differential point. The presence of a stellate depression in the center of the valve when seen "en face" marks the opening of the terminal ileum. The profile appearance is that of an epsilon, which when seen offers further assurance of its benign nature.

Absence of tenderness on compression helps to exclude associated edema and acute inflammation, and when herniation of ileal mucosa is present, change of size and shape can be demonstrated roentgenologically, also indicating benignancy.

Lasser and Rigler[8] suggest that if the lesion is diagnosed by x-ray as an incidental finding that no therapy is necessary and close follow-up examination is indicated. This is the course presently followed at the Maine Medical Center.

However, in many cases, the actual nature of the cecal lesion is in doubt and since malignancy cannot be ruled out, the patients usually undergo radical resection. Except for four cases in the literature, all patients had resection of terminal ileum and either hemi or total right colectomy. Both of the cases presented here had right colectomies. Following these procedures all such patients were reported to have done well.

In the papers of Hulten[2] and Cabaud and Harris[11] a total of four patients underwent exploratory laparotomy with cecostomy and inspection of the ileo-cecal valve. Two of the patients then underwent wedge resection of the valve with two, four, and eight year contrast study follow ups with no symptoms subsequently and no evidence of ileo-cecal valve enlargement.[2] Two of the patients underwent resection of the fat beneath the mucosa with no symptoms or signs of reaccumulation after several months follow up.[11] One case discussed by Boyden[18] was treated by circumcision of the ileo-cecal valve.

It is reasonable to propose that if a symptomatic lesion of the ileo-cecal valve is found on x-ray study, that the surgeon plan to visualize the lesion directly at the time of operation via cecostomy. Results of direct inspection of the lesion or frozen section of a biopsy specimen might prevent the patient from undergoing radical bowel resection.

Conclusion

Lipomatosis of the ileo-cecal valve is a benign lesion which can be diagnosed by adequate roentgenological study. If the lesion is asymptomatic and an incidental finding, it can be safely followed by periodic barium enemas. When the lesion gives rise to symptoms, it is suggested that the surgeon plan either wedge resection or excision of the fat beneath the mucosa via cecostomy. Such a procedure is relatively brief and would lessen the potential morbidity especially in the poor risk patient.

References

1. Hinkel, C. L.: Roentgenological Examination and Evaluation of the Ileocecal Valve. Am. J. Roentgenol. 68:171-182, 1952.
2. Hulten, Jan: Lipomatosis of the Ileocecal Valve. Acta Chir. Scand. 192:104-111, 1965.
3. Hopkins, J. E., Deaver, J. M.: Lipomatosis of the Ileocecal Valve. Dis. of the Colon and Rectum 6:215-218, 1963.
4. Kelby, G. M.: Submucous Lipomas of the Ileocecal Valve. Journal Lancet 68:301-304, 1948.
5. Golden, R.: Enlargement of the Ileocecal Valve. Am. J. Roentgenol. 50:19-23, 1943.
6. Cemford, M. W.: Submucous Lipomata of the Gastro-Intestinal Tract. Surg. Gynec. Obst. 52:101-118, 1931.
7. Fleischner, F. G., Bernstein, C.: Roentgen-Anatomical Studies of the Normal Ileocecal Valve. Radiology 54:43-58, 1950.
8. Lasser, E. C., Rigler, L. G.: Ileocecal Valve Syndrome. Gastro-enterology 28:1-16, 1955.
9. Saver, W. G., Hodgson, J. R., Mayne, J. G., Judd, E. S.: Differential Diagnosis in Defects of the Ileocecal Junction. Gastroenterology 29:837-848, 1955.
10. Woloschuk, O., King, W. B.: Lipomatosis of the Ileocecal Valve. Canadian Medical Association Journal 85:701-704, 1961.
11. Cabaud, P. E., Harris, L. T.: Lipomatosis of the Ileocecal Valve. Ann. of Surgery 150:1092-1098, 1959.
12. Phillips, W. M., Remine, W. H., Beahrs, O. H., Scudamore, H. H.: Benign Lesions of the Cecum Simulating Carcinoma. J.A.M.A. 172:1465-1468, 1960.
13. Edwards, M., Zangara, H.: Lipomatous Hypertrophy of the Ileo-Cecal Valve. Am. J. Surg. 82:533-537, 1951.
14. Seabrook, D. B., Stevens, R., Scholl, V., Nohlgren, J.: Lipomatosis of the Ileocecal Region. Am. J. Surg. 92: 214-221, 1956.
15. Balaz, M., Bonna, L., Kertesz, T.: Lipomatosis of the Ileocecal Valve. Chirung. 35:99-101, 1965.
16. Salem, M., and H. McGee: Hypertrophy of the Ileocecal Valve. Arch. of Surg. 78:928-933, 1959.
17. Rigler, L. G., and Lasser, E.: Prolapse of Lower Lip of Ileocecal Valve Into Terminal Ileum. Am. J. Roentgenol. 65:878-881, 1951.
18. Cited by Seabrook et Coll. Am. J. Surg. 92:214-221, 1956.

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2-5 yr. . . . 1 tsp. t.i.d. (6 mg.)
5-8 yr. . . . 1 tsp. q.i.d. (8 mg.)
8-12 yr. . . 1 tsp. 5 times daily (10 mg.)
Adults: 2 tsp. 5 times daily (20 mg.) or 2 tablets q.i.d.

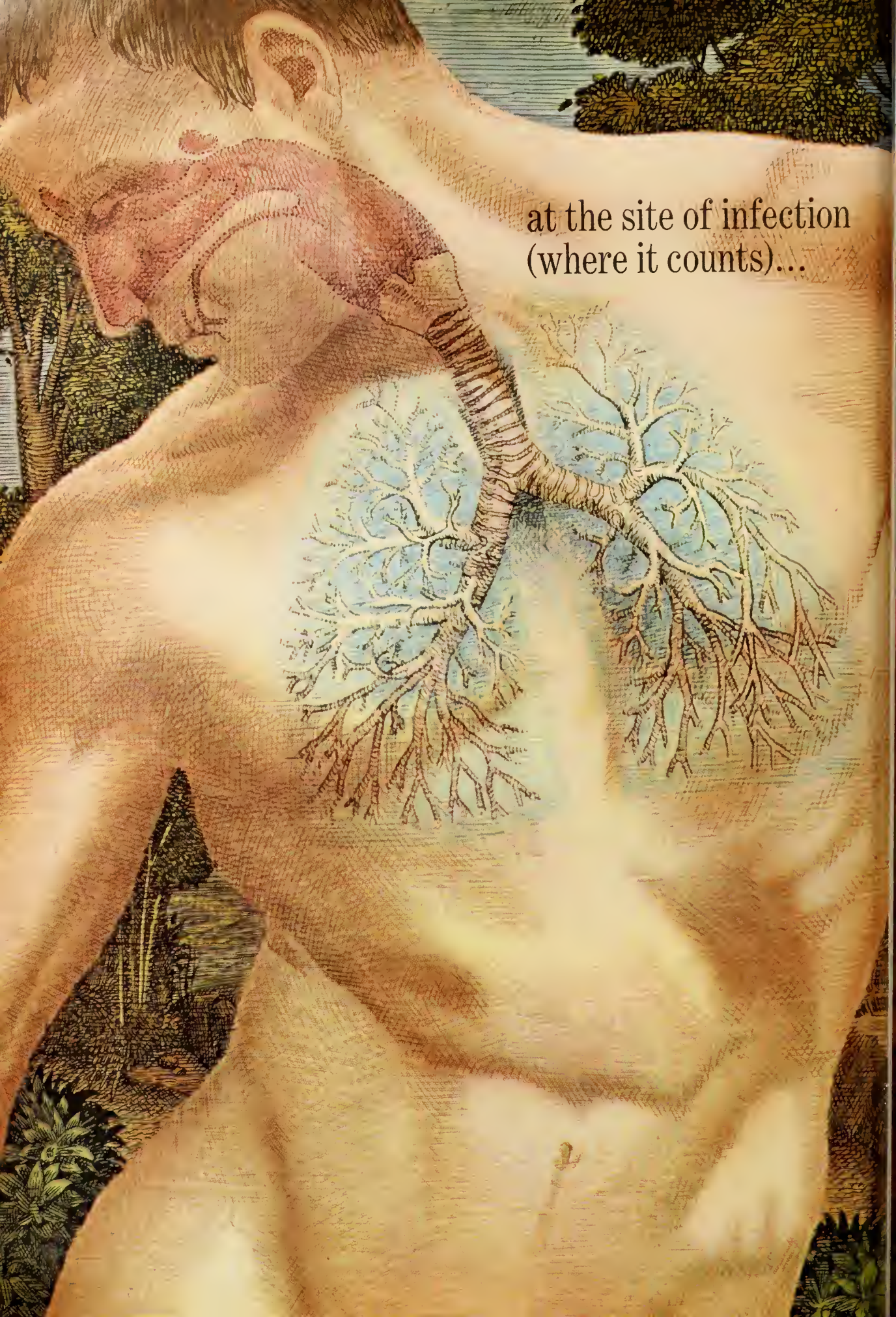
*Based on 4 cc. per teaspoonful.
Maintenance dosage may be as low as one-fourth the initial daily dosage.

Precautions: Lomotil is a federally exempt narcotic preparation of very low addictive potential. Recommended dosages should not be exceeded, and medication should be kept out of reach of children. Should accidental overdosage occur signs may include severe respiratory depression, flushing, lethargy or coma, hypotonic reflexes, nystagmus, pinpoint pupils and tachycardia. Lomotil should be used with caution in patients with impaired liver function or those taking addicting drugs or barbiturates.

Side Effects: Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness, insomnia, numbness of the extremities, headache, blurring of vision, swelling of the gums, euphoria, depression and general malaise.

1. Barowsky, H., and Schwartz, S. A.: J.A.M.A. *180*:1058-1061 (June 23) 1962. 2. Cayer, D., and Sohmer, M. F.: N. Carolina Med. J. 22:600-604 (Dec.) 1961. 3. Hock, C. W.: J. Med. Ass. Georgia *50*:485-488 (Oct.) 1961. 4. Van Derstappen, G., and Vandenbroucke, G.: Med. Klin. 56:962-964 (June 2) 1961. 5. Merlo, M., and Brown, C. H.: Amer. J. Gastroent. 34:625-630 (Dec.) 1960. 6. Weingarten, B.; Weiss, J., and Simon, M.: Amer. J. Gastroent. 35:628-633 (June) 1961.

SEARLE *Research in the Service of Medicine*


at the site of infection
(where it counts)...

Ilosone® provides more antibacterial activity than any other oral erythromycin

Acid stable, better absorbed... Ilosone produces faster, higher, more prolonged blood levels, even in the presence of food[1-3]

Because it is the most active form of oral erythromycin, Ilosone can help assure consistently greater antibacterial activity at the site of infection. Ilosone produces peak antibacterial blood levels two to four times those of other erythromycin preparations.[1,2] Not only are these levels attained earlier, but they are maintained for much longer periods. Even the presence of food does not seem to affect the activity of Ilosone.[1,3]

In the treatment of patients with bacterial infections susceptible to erythromycin, Ilosone has compiled an excellent therapeutic record. Since it exerts its greatest activity against gram-positive organisms, it is particularly useful in common respiratory and soft-tissue bacterial infections. Ilosone kills—not merely inhibits—streptococci, pneumococci, and more strains of staphylococci than any other macrolide antibiotic. This bactericidal action, coupled with the high antibacterial levels attained, makes Ilosone especially valuable in patients with low host resistance, such as infants, debilitated individuals, and diabetics.

Ilosone has shown no cross-resistance with penicillin and may be effective against organisms that have become resistant to that agent. Despite its high antibacterial activity, Ilosone has demonstrated a low incidence of side reactions. Blood dyscrasias, ototoxicity, and tooth staining have not been observed. Infrequent cases of drug idiosyncrasy, manifested by a cholestatic jaundice, have occurred, but there have been no known definite residual effects.

Now available:
New! Ready-mixed Ilosone Liquid 125! (Contains erythromycin estolate equivalent to 125 mg. erythromycin base per 5-cc. teaspoonful.)

700970

Ilosone® Lilly
Erythromycin Estolate

(See next page for prescribing information.)

Ilosone®/the most active oral form of erythromycin

Description: Ilosone is the most active form of oral erythromycin that has been developed. Because it is stable in acid, well absorbed, and excreted in lesser amounts in the bile, it provides faster, higher, and longer-lasting levels of antibacterial activity (ABA) in the serum, even when taken with food, than do comparable doses of erythromycin.

Indications: Ilosone is indicated in infections caused by microorganisms sensitive to its action (especially staphylococci, hemolytic streptococci, and pneumococci). The drug is therefore useful in a high proportion of bacterial diseases encountered in clinical practice and particularly in the treatment of bacterial infections of the upper and lower respiratory tract and soft tissues.

In the treatment of acute bacterial pharyngitis and tonsillitis, this antibiotic has promptly eradicated the bacteria (streptococci) and has produced a parallel prompt clinical improvement. There have been no group A beta-hemolytic streptococci resistant to this preparation. In beta-hemolytic streptococcus infections, treatment should be maintained for ten days to prevent the development of rheumatic fever or glomerulonephritis.

Erythromycin estolate has proved to be very effective in pneumococcus pneumonia and in acute bronchitis with pneumococci on culture. Bronchopneumonia and otitis media in children have responded well to its use.

The antibiotic has been used very successfully in staphylococcus infections. Good therapeutic results have been obtained in soft-tissue infections, abscesses, cellulitis, carbuncles, wound infections, and furunculosis.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents. As is the case with any treatment regimen used in these severe conditions, surgical procedures should be performed when indicated, and large dosages of the antimicrobial agents should be employed. In this fashion, Ilosone has been effective in staphylococcus pneumonia, osteomyelitis, septicemia, empyema, and meningitis.

Multiple 500-mg. doses of the drug have also been useful in gonorrhea and syphilis. Since penicillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with preexisting liver disease or dysfunction.

Adverse Reactions: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have developed in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly, usually within forty-eight hours, if the drug is readministered to sensitive patients. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a second time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small compared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extrahepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeared t be definitely related to use of the drug, laboratory findings we characterized by increased direct-reacting bilirubin, elevate alkaline phosphatase levels, negative or weakly positive cephali flocculation and thymol turbidity tests, elevated serum glutam oxalacetic transaminase levels, peripheral eosinophilia, and no mal cholecystograms.

Individual idiosyncrasy seems evident since jaundice has n been reported in other patients taking prolonged courses of t medication. Patients with chronic infection have been given 1 to 2 Gm. of the drug daily for periods of two to six months, a patients with rheumatic fever have taken prophylactic doses 0.5 Gm. daily for two years without difficulty. In one group 144 patients who received the drug daily for two years, no jau dice was noted. It was of interest that members of six of the patients' families, who were not taking the drug, had episod of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels we determined in a group of fifty-four adults and children who to 250 mg. of Ilosone daily for an average of sixteen months rheumatic fever prophylaxis. The results were compared wi those of a similar group of forty-four patients who received pe icillin. There were no cases of jaundice in either group. Elevati of SGPT and serum alkaline phosphatase levels during the cour of treatment was observed in one patient treated with Iloso and in two patients treated with penicillin. Seven other patie in the group receiving Ilosone and four others in the penicill group showed elevations in one of the tests at some time duri administration of the drugs.

Very satisfactory therapeutic results, without toxicity, we reported in 102 pediatric patients who received short-term (te day) courses of Ilosone in the treatment of streptococcus inf tions. Results of liver function tests in these patients we comparable to those in a similar control group who had receiv penicillin.

Gastro-intestinal disturbances not associated with hepatic fects are observed in a small proportion of individuals as a res of a local stimulating effect of the medication on the alimenta tract; however, the normal intestinal gram-negative bacter flora is not appreciably altered by erythromycin drugs.

Although allergic manifestations are uncommon with the u of erythromycin, there have been occasional reports of urticar skin eruptions, and, on rare occasions, anaphylaxis.

Administration and Dosage: Ilosone is administered orally.

Ilosone Pulvules®, Ilosone Liquid 125, Ilosone, 125, for O Suspension, Ilosone Drops, Ilosone Chewable Tablets.

For infants and for children under twenty-five pounds of b weight, the usual dosage is 5 mg. per pound every six hours; children twenty-five to fifty pounds, 125 mg. every six hou (Tablets Ilosone Chewable should be chewed or crushed a swallowed with water.)

For adults and for children over fifty pounds, the usual dos of Ilosone is 250 mg. every six hours.

For severe infections, these dosages may be doubled.

When larger doses are indicated, parenteral erythromy therapy should be considered.

In the treatment of syphilis, the recommended total dosag 20 to 30 Gm. given in divided doses for a period of ten to fift days. Close follow-up of the patient is necessary since eryth mycin drugs have not had adequate evaluation in all stages syphilis. Examinations of spinal fluid are recommended as p of the follow-up therapy.

For gonorrhea, 500 mg. four times a day for four days recommended. In the treatment of gonorrhea, patients wit suspected lesion of syphilis should have a dark-field examina before receiving antibiotics, and monthly serologic tests sh be made for a period of three months.

How Supplied: Pulvules Ilosone, Capsules, N.F., 125 and 250 (equivalent to base), in bottles of 24 and 100.

Ilosone Liquid 125, Oral Suspension, U.S.P., 125 mg. (equiva to base) per 5-cc. teaspoonful, in 60-cc. and pint-size packa

Ilosone, 125, for Oral Suspension, N.F., 125 mg. (equiva to base) per 5-cc. teaspoonful, in 60 and 150-cc.-size packa

Ilosone Drops, 5 mg. (equivalent to base) per drop, in 10-cc.- packages, with dropper calibrated at 25 and 50 mg.

Tablets Ilosone Chewable, N.F., 125 mg. (equivalent to ba in bottles of 50. [032

References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:69, 2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:398, 3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198, 1960.

Additional information available to physicians upon request.
Eli Lilly and Company, Indianapolis, Indiana 46206.

La

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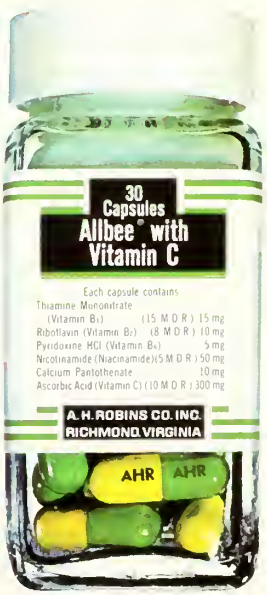
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DEAN H. FISHER, M.D.
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State Of Maine

Department of Health and Welfare

Mental Health Centers and the Future of Federal Spending

WILLIAM E. SCHUMACHER, M.D.*

With the impetus provided by Federally-funded mental health planning and with the direction of programs as the result of Public Law 88-164 which provided funds for construction of community mental health centers and subsequent amendments providing assistance in initial staffing of these centers, Maine has developed a plan of regionalization of service in five primary service areas. Within each of these service areas a mental health center will be located and two of the proposed centers are now funded under Public Law 88-164. Initial staffing grant applications are being prepared for supplementing staffing in these facilities. Additionally under state support basic professional staff has been provided in each of the five areas, four under direct state employment and the fifth under a matching grant-in-aid program which has been in existence since 1959.

Maine's basic goal is to staff fully five regional mental health centers with two psychiatrists, two psychologists and three social workers with possible additional professional personnel. Supplementing these center services will be satellite services and component services located in the service area of the center. These satellites and components in large measure will function as independent agencies related by program to the centers but operated as non-profit corporate structures or under some other aegis with substantial fiscal support under the community mental health grant-in-aid program. Primary goals are to provide service, including consultation and education, to relieve manpower problems in these centers, and improve institutional programs in scope and quality.

Our three institutional programs will continue to be funded almost exclusively by state funds with some clearly defined extramural services to be funded out of a special mental health improvement fund created from Title IX payments.

Our primary utilization of any increased Federal support and for the utilization of the present categorical grants will be confined to community activities or community related institutional activities. Additionally in the Bureau of Mental Health administration certain professional and technical staff for consultation services will be provided as may be needed although the primary source of support for administration will continue to remain a state responsibility.

The final goal that we have is to cope with the manpower problem. We hope to do this in several ways. The first of these is to continue to utilize our educational leave program for employed persons to permit them to advance their professional training. This has been impeded by the necessity of retaining an open position unfilled during the period of educational leave of absence. With Federal funds we plan to hire replacement employees during periods of educational leave. The second program is designed to assist the University of Maine's graduate program in clinical psychology by funding ten stipends for graduate students. These would be funded at the level of $2,400 annually and might be adjusted upward on the advice of the Department of Psychology at the University of Maine. Additionally we plan to fund no less than six psychology internships in both our institutional and center programs. Third, in the matter of psychiatry training, arrangements have been completed with Dartmouth Medical School and are in process at the University of Vermont to fund State of Maine residencies in psychiatry at the levels of $6,000, $7,000 and $8,000 annually for the first, second and third years respectively. These stipends will carry an obligation to practice in the State of Maine for no less than one year after completion of psychiatric training. This program will subsequently be providing two psychiatrists who have completed three years of residency training on an annual basis who have a commitment to try psychiatric practice within the State of Maine. Additionally, in

*Director, Bureau of Mental Health, Department of Mental Health and Corrections, Augusta, Maine 04330.

TABLE 1

FISCAL ESTIMATES SUMMARY

Mental Health & Administration and Community Mental Health (Service and Grant-in-Aid)

	*1967**	*1968*	*1969*	*1970*	*1971*	*1972*	*1973*
Total Costs (FY):	$639,500	$901,000	$1,048,000	$1,150,000	$1,150,000	$1,204,000	$1,204,000
Less: State and Local Funding	$574,500	$836,000	$ 883,000	$ 900,000	$ 900,000		$ 950,000
Federal Request Balance	$ 65,000	$ 65,000	?	?	?	? (hopefully	? the balance)

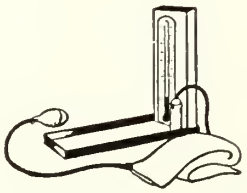
*of 1967 Estimate
State Funds:
Local Funds
Federal Funds

the matter of physician training, we plan to continue a program started this year of selecting a promising and interested general practitioner attached to a small general hospital in a rural area of the state and provide him with three months of intensive psychiatric training at the Department of Psychiatry at the Mary Hitchcock Hospital in Hanover, New Hampshire in order to provide a psychiatrically experienced general practitioner who can function in providing local service for crisis situations when backed up by consultation from the centers. We would plan to do this for one G.P. annually and might increase this to two if enough candidates can be solicited. This is presently at the rate of $4,200 annually and might be doubled if we select two G.P.'s annually.

In summary then, our primary concern is the promotion of the development of five community mental health centers with supporting components of service as may be needed and with satellite services in rural areas. Additionally we are attempting to increase our pool of mental health manpower in all professional fields by the extension of our educational leave program and by the subsidy of certain educational programs.

As a means of furthering our primary goal there will be utilization of Federal funds increasing not only the total but the percentage of grant-in-aid for community mental health programs and for the subsidy of other extramural institutional services related to center programs. Federal funding will also be necessary to augment our training efforts.

In the matter of funding, the level of community and state support can be expected to increase slowly. Federal funding will be used to supplement existing and increased local funding in the attainment of the above goals in whatever amount is allotted. The maximum impact of Federal funding can be obtained by limiting the restrictions on the use of such funds.



AMERICAN CANCER SOCIETY - MAINE DIVISION, INC.

Brunswick, Maine

The "Image" of Cancer*

STANLEY WARREN**

Why does one woman go regularly for physical checkups while another goes only when ill?

In similar fashion, why do some astute executives watch their health as carefully as they watch their weight, while others ignore their personal health unless confronted by an obvious urgency?

Whatever can be said about the vagaries of human beings, you've got to admit they're amazingly different. No matter what cause or idea or plan is up for discussion, there'll be those who will reach exactly opposite points of view. Everywhere we go we find believers and dissenters, enthusiasts and the bored. This inevitable diversity is one of the wondrous anomalies of human nature.

In the field of health this tendency to be different is perhaps best seen in the attitude of the American public toward cancer, a dangerous killer that must be brought under control.

During the past quarter century, intensive educational efforts by the American Cancer Society have succeeded in bringing about marked changes in the public's knowledge of and thinking about cancer. Obsolete and incorrect attitudes have largely been abandoned as the sharp light of realism focuses on the problem. Myths, old wives tales and downright misconceptions have gradually faded into obscurity — a welcome tribute to continued education and relentless application of research and knowledge.

Within the lifetime of most adults today, several key changes to the approach to the whole cancer syndrome have slowly been evolving. There's increased knowledge; there's less secrecy; there is much more optimism about cancer as the public has come to realize the disease, or at least many forms of it, can be cured if diagnosed early and treated in time; and, lastly, there is far less squeamishness about cancer today. It can readily be mentioned in the living room. People know now that cancer is not contagious, nor does it signify "bad blood" or some equally naive misconception. Nor is any prejudice found today directed against a cancer-cured individual.

Yet it does seem odd to report that despite these welcome steps towards eventual victory, the public still fails to protect itself adequately against cancer. Why?

First off, a key way individuals can check for a cancerous condition is via regular physical examinations including tests for cancer. Considering that a life may be at stake, this is a relatively simple matter. Although the ACS has placed heavy emphasis over the years on this factor, not enough people take enough physicals.

How, then, can the public's thinking on this question be ascertained? The most direct way, obviously, is to go direct to the people and ask questions. A survey, conducted by Lieberman Research, Inc., topflight New York research house, was ordered by the Cancer Society to bring to light the variety of reasons which deter people from going for checkups.

Conducted on a nationwide basis and including a broad cross section of the public, the survey showed that 26% went regularly for physical examinations including cancer tests. About 17% revealed they had gone in the past but had not made it a regularly practice. The remainder, some 57%, were classed as "non-goers" when they replied they have not had a physical checkup which included a cancer test.

In the "most goer" group, women led the men by 40% to 13%. The age groups most interested in their personal health were those between 20 and 49 years old. College-educated group topped the others as did those in higher income brackets.

What are the reasons which impelled these people to have a checkup? In answer to the direct question "Why are you likely to go for some kind of a physical checkup that includes cancer tests in the next two or three years?," here's how respondents replied:

	Total	*Current Goers*	*Past Goers*	*Non-Goers*
Gets exams — general	37%	48%	28%	29%
Get Pap test, female check-up	9	12	9	6
Wise precaution	24	25	22	25
Ill, not feeling well	13	11	20	12
Concerned about cancer	10	9	11	11
Older	9	6	9	12
Doctor suggested it	7	10	7	3
Family suggested it	1	1	2	1
Work requirement	6	6	3	7
Military requirement	2	2	2	3
Haven't been in a while	6	2	10	9
Good idea — general	6	4	7	7

Conversely, what were the reasons given for not going for checkups? Surprisingly, the key reason by far (58%) was that the respondent felt "healthy."

Of those who said they were not likely to go for a checkup just over 10% admitted no concern over cancer. Some 8%, however, felt there was no reason to go because their doctor had not suggested it. Money, or rather the lack of it, appeared to bother an almost negligible 4%, with half that total saying they had "no time." Another 2% confessed they were "afraid to go."

Cancer often gives very definite warning signals. What are they? And how many persons recognize any or all of these signs? Answers to these questions will be discussed in the next installment along with the public's knowledge of the need for speed on discovering one of these signals.

*Part one of a six-part series from American Cancer Society News Service Release.

**News Editor, American Cancer Society, Inc.



when he just can't sleep

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Adverse Reactions: Idiosyncrasy, such as excitement, hangover, or pain, may appear. Hypersensitivity reactions occur in some patients, especially in those with asthma, urticaria, or angioneurotic edema.

Overdosage: C.N.S. depression. Symptoms—Depression of respiration and of superficial and deep reflexes, slight constriction of the pupils (in severe poisoning, dilation), decreased urine formation, lowered body temperature, coma. Treatment—Symptomatic and supportive (gastric lavage; intravenous fluids; maintenance of blood pressure, body temperature, and adequate respiration). Dialysis may speed removal of barbiturates from body fluids.



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[031767]

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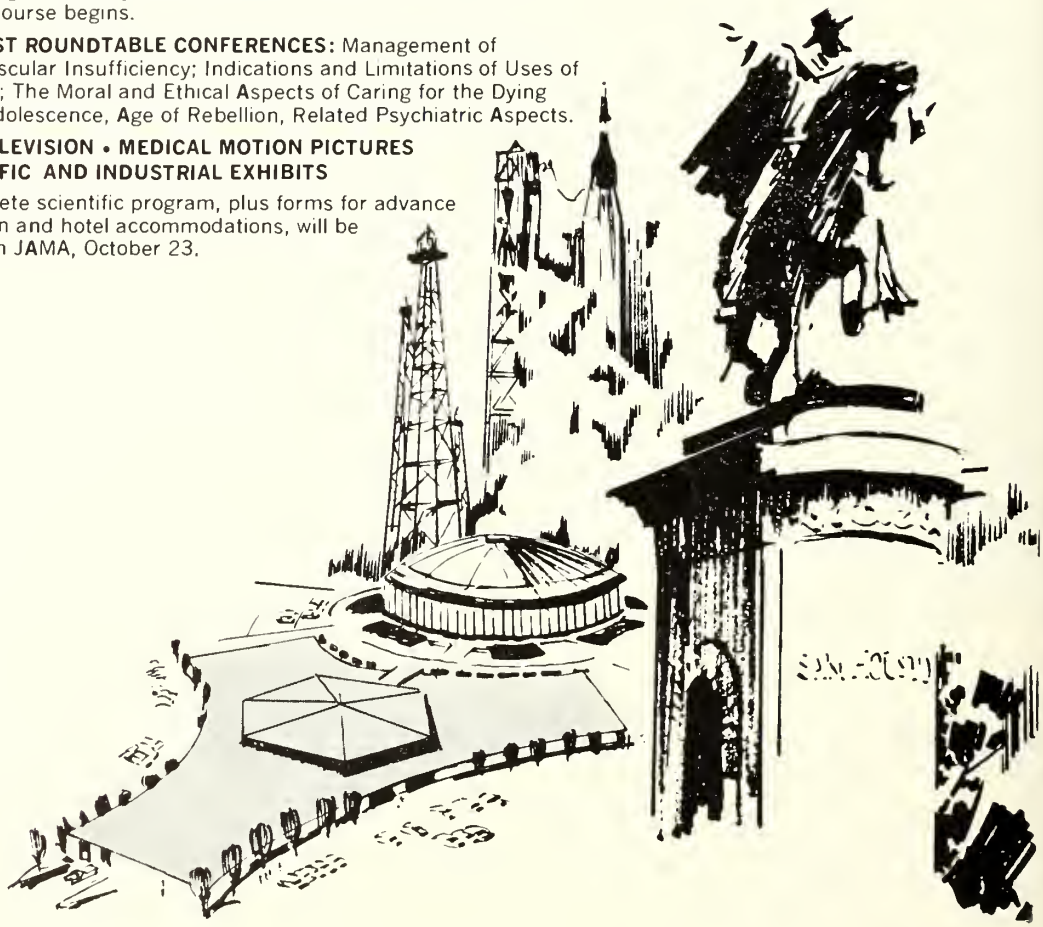
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The Journal of the Maine Medical Association

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Across The Desk

The Health Consequences of Smoking

A PHS report summarizing three and one-half years of research into the health consequences of smoking was issued recently. Its conclusions were that the 1964 findings of the Surgeon General's Advisory Committee on Smoking and Health have been confirmed, and in many ways strengthened.

Four major conclusions are stated in the 1967 report:

1. Cigarette smokers have substantially higher rates of death and disability than their nonsmoking counterparts in the population. Cigarette smokers tend to die at earlier ages and experience more days of disability than comparable nonsmokers.

2. A substantial portion of earlier deaths and excess disability would not have occurred if those affected had never smoked.

3. If it were not for cigarette smoking, practically none of the earlier deaths from lung cancer would have occurred; nor a substantial portion of the earlier deaths from chronic bronchopulmonary diseases; nor a portion of the earlier deaths of cardiovascular origin.

4. Cessation or appreciable reduction of cigarette smoking could delay or avert a substantial portion of deaths which occur from lung cancer, chronic bronchopulmonary diseases, and cardiovascular disease.

The emphasis of the present problem has changed away from the question, "Does cigarette smoking cause disease?," to the more precise questions:

1. How much mortality and excess disability are associated with smoking?

2. How much of this early mortality and excess disability would not have occurred if people had not taken up cigarette smoking?

3. How much of this early mortality and excess disability could be averted by the cessation or reduction of cigarette smoking?

4. What are the biomechanisms whereby these effects take place and what are the critical factors in these mechanisms?

The following are statements from the new report:

—Of men between the ages of 35 and 60, approximately one-third of all deaths are "excess" deaths in the sense they would not have occurred as early as they did if cigarette smokers had the same death rates as nonsmokers.

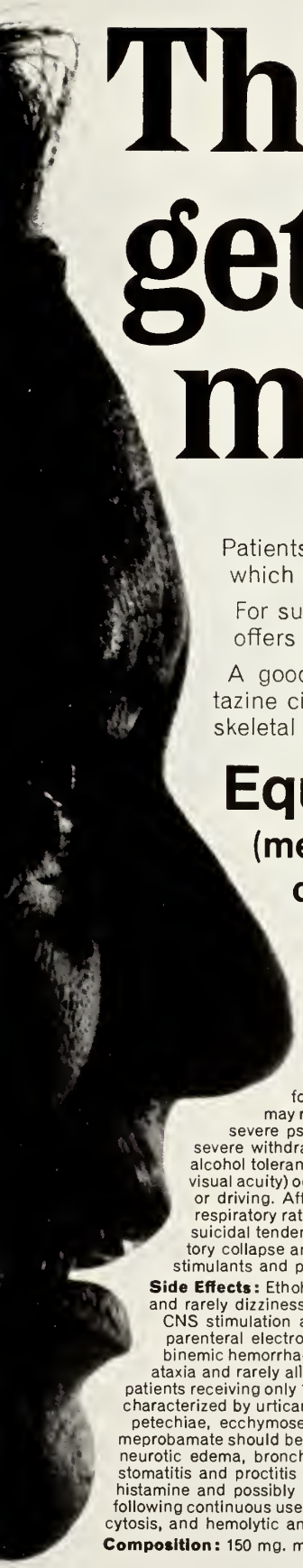
—Cigarette smoking is now the most important cause of chronic bronchopulmonary diseases and greatly increases the risk of dying from these diseases.

—Men who smoke cigarettes have a death rate from coronary heart disease 70 percent higher than that of non-smokers. This increases to 200 percent and even higher in the presence of other known "risk factors" such as high blood pressure and high serum cholesterol.

—Seventy-seven million days of work are lost each year in the United States which would not have been lost if cigarette smokers had the same rates of illness as non-smokers.

—A relationship between cigarette smoking and death rates from peptic ulcer has been confirmed, and data now suggest that a similar relationship exists between cigarette smoking and morbidity from this cause.





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Contraindications: History of sensitivity or severe intolerance to aspirin or meprobamate.

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Precautions: Keep out of reach of children. Not recommended for patients 12 years old or less. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use of meprobamate may result in dependence or habituation in susceptible persons—as alcoholics, ex-addicts, severe psychoneurotics. Withdraw gradually after prolonged high dosage to avoid possibly severe withdrawal reactions including epileptiform seizures. Warn patients of possible reduced alcohol tolerance. If drowsiness, ataxia or visual disturbances (impairment of accommodation and visual acuity) occur, reduce dose. If symptoms persist, caution patients against operating machinery or driving. After meprobamate overdose, prompt sleep, reduction of blood pressure, pulse and respiratory rates to basal levels, and hyperventilation are reported. Give cautiously to patients with suicidal tendencies. Treat attempted suicide (has resulted in coma, shock, vasomotor and respiratory collapse and anuria) with immediate gastric lavage and appropriate supportive therapy (CNS stimulants and pressor amines as indicated).

Side Effects: Ethoheptazine and aspirin may occasionally cause nausea, vomiting, epigastric distress, and rarely dizziness. Overdosage may result in CNS depression (drowsiness and lightheadedness) or CNS stimulation and salicylate intoxication (requires induced vomiting or gastric lavage, specific parenteral electrolyte therapy for ketoacidosis and dehydration, and observation for hypoprothrombinemic hemorrhage [usually requires whole blood transfusions]). Meprobamate may cause drowsiness, ataxia and rarely allergic or idiosyncratic reactions. These reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Mild reactions are characterized by urticarial or erythematous maculopapular rash. Acute nonthrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever have been reported. If allergic reaction occurs, meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Treat symptomatically such as with epinephrine, antihistamine and possibly hydrocortisone. A few cases of leucopenia, usually transient, have been reported following continuous use. Rarely, cases of aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis, and hemolytic anemia have been reported; almost always, in the presence of known toxic agents.

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Necrology

Carl W. Ruhlin, M.D.

1900-1967

Carl W. Ruhlin, M.D., 66, of Bangor, Maine died on May 24, 1967. He was born in November of 1900 in North Andover, Massachusetts, son of Otto N. and Mae Ruhlin.

Dr. Ruhlin graduated from the University of Rhode Island in 1922 and received his medical degree from Tufts University School of Medicine in 1931. He interned at the Maine General Hospital from 1931 to 1932 and practiced orthopedic surgery in Portland from 1932 to 1935. He then studied under Dr. Arthur Steindler at the University of Iowa Hospital and served there until 1940 as assistant orthopedic surgeon. In 1940 Dr. Ruhlin moved to Bangor and practiced there until his death.

He was a member of the Maine Medical Association, the Penobscot County Medical Association, and the American Medical Association. Dr. Ruhlin was a staff member at the Eastern Maine General Hospital and St. Joseph Hospital in Bangor, a member of the Portland Medical Club, the Cranston, Rhode Island Masonic Lodge, the Maine Consistory and the Anah Temple Shrine in Bangor.

Surviving are his widow, Lalia Stevens Ruhlin of Bangor; a son, Galen S. who is with the U.S. Army in Vietnam; a daughter, Mrs. Nancy Plummer of Voorheesville, New York; two brothers, Otto of Sangerville and Donald; and a stepbrother, Douglas Rennie of Abbott Village.

News, Notes and Announcements

A.M.A. Lectures in Clinical Nutrition

Colby College in Waterville
Tuesday, November 14 – 7:30 p.m.
Lecturer: Dr. Clarence Cohn, Director, Division of Nutritional Sciences, Michael Reese Hospital and Medical Center, Chicago, Illinois
Topic: "Some Recent Developments in Clinical Nutrition"

University of Maine in Orono
Monday, November 13
No specific time has yet been determined
Lecturer: Dr. Clarence Cohn

Maine Radiological Society Elects Officers

The Maine Radiological Society, a chapter of the American College of Radiology, elected the following officers at the annual meeting in June: President, John T. Chen, M.D., Waterville, Maine; Vice-President, Robert S. Cruickshank, Jr., M.D, Waterville, Maine; Secretary-Treasurer, Robert A. Bearor, M.D., Portland, Maine.

Twenty-fourth Annual New England Postgraduate Assembly Statler Hilton Hotel, Boston, Massachusetts November 7, 8 and 9, 1967

The New England Postgraduate Assembly sponsored by the Council of the New England State Medical Societies is open to all Physicians, Research Fellows, Fellows in Training, Interns, Residents and Students. Registration fee for practicing physicians is $15.00. Approved for 24 AAGP hours of postgraduate study credit.

For further information write to Mr. Getty Page, Secretary, Council of the New England State Medical Societies, 128 Merchants Row, Rutland, Vermont.

American Medical Association to Sponsor Ninth National Conference on the Medical Aspects of Sports

The Ninth National Conference on the Medical Aspects of Sports, sponsored by the American Medical Association under the auspices of its Committee on the Medical Aspects of Sports, will be held in Houston, Texas at the Hotel America on November 26, 1967.

The Ninth Conference will cover a wide range of subjects of interest to those serving school and college athletic programs. Included will be forums and discussion sections relating to prevention of knee injuries, sports cardiology, and quackery in sports. Two sessions will be devoted to a series of common clinical conditions of rather variable significance in the athletic setting (e.g., gastroenteritis, concussions, genitourinary tract injuries, and rib injuries). At the Conference Luncheon, Eduardo Hay, M.D., Director General of the Centro Deportivo Olimpico Mexicano, will discusss the preparations for the 1968 Olympic Games.

The Conference is open to key nonmedical athletic personnel as well as interested physicians. Those who would like to receive further information concerning the Conference should address the Committee on Medical Aspects of Sports, American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610.

36th Annual Meeting of The American Academy of Pediatrics

The American Academy of Pediatrics will hold its 36th annual meeting in Washington, D. C. on October 21-26, 1967.

The meeting, scheduled for the Washington Hilton Hotel, will feature symposiums on manpower and graduate training, learning, advances in obstetrics of interest to pediatricians, vaccine progress and problems, and exciting developments in pediatrics.

Additional general session papers will cover subjects including the recognition and management of cardiac failure in infancy, care of burns at home, and the child with chronic renal (kidney) disease.

Section Meetings – Supplementing general session presentations, will be additional timely scientific programs presented Saturday and Sunday, October 21-22 during the meetings of the Academy Sections on Allergy, Anesthesiology, Cardiology, Child Development, Diseases of the Chest, and Surgery, and the Committee on Urology. The Section on Military Pediatrics will meet Tuesday, October 24.

Seminars and Round Tables – The meeting will also feature 11 seminars and 24 round tables treating such specialized areas as newborn and premature, pediatric cardiology, infectious diseases, early psychological problems in pediatric practice, and mental retardation.

Seminars will be presented Saturday and Sunday, October 21-22, and round tables are scheduled for Monday, Tuesday, and Wednesday, October 23-25.

Awards – Several awards will be made during the meeting, including the Borden Award for research in nutrition; two E. Mead Johnson Awards for outstanding pediatric research, and the C. Anderson Aldrich Award by the Section on Child Development.

The Academy meeting is open to physicians who are not pediatricians. Registration fees are $18.00 for Academy members, applicants to the Academy, applicants to the American Board of Pediatrics, nonmembers out of school less than five years, and physicians in the Armed Forces.

Registration fee for nonmember physicians out of school more than five years is $50.00.

Interested physicians may write the American Academy of Pediatrics, 1801 Hinman Avenue, Evanston, Ill. 60204, for a preliminary program and registration forms.

The Academy is the Pan American association of physicians certified in the care of infants, children, and adolescents. It has about 10,000 members in the U.S., Canada, and Latin America.

State of Maine Board of Registration of Medicine Secretary — George E. Sullivan, M.D. Waterville, Maine

Physicians Licensed to Practice Medicine and Surgery in the State of Maine March 7-9, 1967

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Mustafa Aydin, M.D., 652 Greystone Terr., Lancaster, N.B., Can.
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What's all the fuss about bactericidal?

The ultimate aim in antibiotic therapy is to contain the bacterial colony and eliminate infection. Both 'cidal' agents and bacteriostatic DECLOMYCIN achieve this goal. DECLOMYCIN inhibits susceptible pathogens by stopping their growth; cidal agents affect the pathogens only while they are growing.

Though the two mechanisms differ, the end result is the same—containment of the infecting organism. *However, a very important attribute of any antibiotic is its potency against a broad range of pathogens.* DECLOMYCIN not only offers broad-spectrum potency, but high serum and tissue levels with persistent activity against tetracycline-sensitive organisms. Therapeutic benefits continue for 1-2 days after dosage stops to help prevent relapsing infection.

These are the reasons why so many doctors make DECLOMYCIN their basic broad-spectrum antibiotic. At last count, one billion doses had been administered since its introduction, and the number keeps rapidly growing.

DECLOMYCIN®
DEMETHYLCHLORTETRACYCLINE

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Prescribing information on next page.

For a wide range of everyday infections—respiratory, urinary tract and others—in the young and aged—the acutely or chronically ill.

True broad spectrum

DECLOMYCIN Demethylchlortetracycline should be equally or more effective than other tetracyclines when the offending organisms are tetracycline-sensitive.

Contraindication: History of hypersensitivity to demethylchlortetracycline.

Warning—In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated, and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions—Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects—Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes. A rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose related. Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth — dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs discontinue medication and institute appropriate therapy.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

Capsules: 150 mg; **Tablets:** film coated, 300 mg, 150 mg, and 75 mg of demethylchlortetracycline HCl.

DECLOMYCIN®
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LEDERLE LABORATORIES, A Division of
American Cyanamid Company, Pearl River, New York

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Unique Nitrospan micro-dialysis process* adds an important dimension–TIME–to nitroglycerin therapy

lelps decrease frequency and severity of attacks; often ıcreases exercise tolerance. Decreases need for sub-ıgual nitroglycerin, increases patient confidence. mooth, continuous release independent of gastrointes-nal functions reduces headache and other side effects ıat might result from peak concentrations of tablet or ıtermittent-release preparations.

ıdication and Dosage: For prophylactic use only in an-ina pectoris, 1 capsule every 12 hours. **Precautions:** For rophylaxis only, not for relief of acute anginal attacks. olerance to nitrites may develop on long-continued use. **ontraindications:** Idiosyncrasy to nitroglycerin, and arly myocardial infarction. **Side Effects:** With use of itrites, transient headache, postural hypotension, nausea and vomiting may occur. Overdoses may cause flushing, dizziness, tachycardia, headache and syncope.

*The **micro-dialysis cell.** Nitrospan's timed-release mechanism is different from those usually employed in sustained-action capsules, which rely on unpredictable digestive processes. The nitroglycerin in Nitrospan capsules is contained within hundreds of dialysis cells of controlled permeability. The contents of each micro-dialysis cell are released by diffusion rather than disintegration, at a continuous rate independent of gastrointestinal action. Only the presence of fluid is required.



NEW from USV **NITROSPAN®** CAPSULES

brand of **nitroglycerin** 2.5 mg. in micro-dialysis cells

For a starter supply of NITROSPAN, write: USV PHARMACEUTICAL CORPORATION, 800 Second Avenue, New York, N.Y. 10017

when bursitis hits a 280-lb. tackle,

hit back with Butazolidin alka



Indications: Osteoarthritis, rheumatoid arthritis, rheumatoid spondylitis, psoriatic arthritis, acute gout, painful shoulder (peritendinitis, capsulitis, bursitis and acute arthritis of that joint), acute superficial thrombophlebitis.

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently. Large doses of Butazolidin alka are contraindicated in glaucoma.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Instances of severe bleeding have occurred. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Before prescribing, carefully select patients, avoi those responsive to routine measures as well as contraindicatec tients. Obtain a detailed history and a complete physical and labor examination, including a blood count. The patient should not ex recommended dosage, should be closely supervised and shou warned to discontinue the drug and report immediately if fever, throat, or mouth lesions (symptoms of blood dyscrasia); sudden w gain (water retention); skin reactions; black or tarry stools or evidence of intestinal hemorrhage occur. Make regular blood co Discontinue the drug immediately and institute countermeasures white count changes significantly, granulocytes decrease, or imm forms appear. Use greater care in the elderly and in hypertens

Adverse Reactions: The most common are nausea, edema and rash. Swelling of the ankles or face may be minimized by withho dietary salt, reduction in dosage or use of diuretics. In elderly pa and in those with hypertension the drug should be discontinued the appearance of edema. The drug has been associated with pep

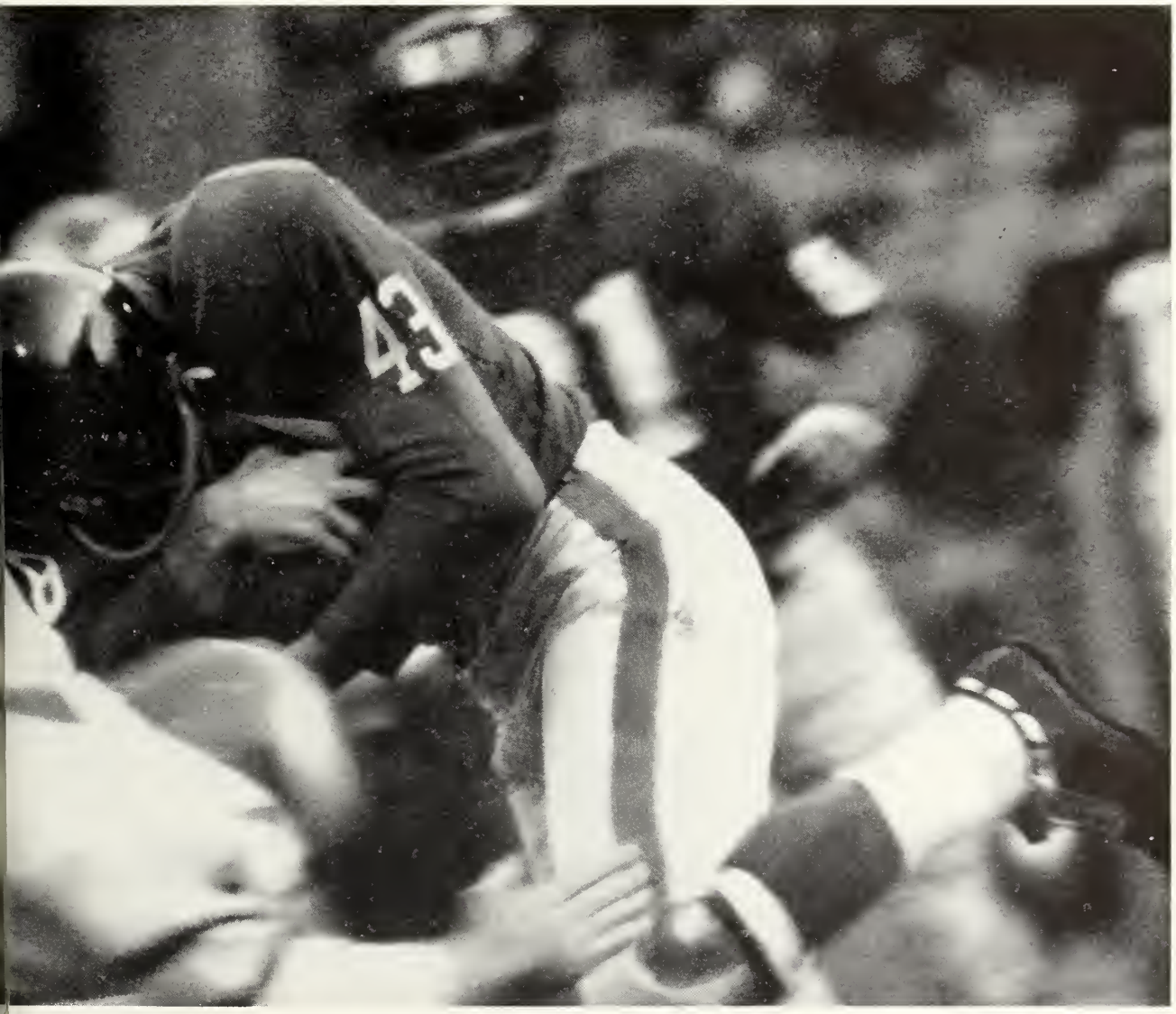
280-lb. tackles—or 108-lb. housewives—Butazolidin alka can hasten recovery from the onizing pain of shoulder bursitis.

not for every patient. Check carefully the Contraindications, Warning and cautions shown below.

d adverse reactions may occur. The most common are nausea, edema and rash. ely, agranulocytosis has been reported. All adverse reactions are listed below, too.

y-for-pay or workaday patients—when they come up with shoulder bursitis and your ical judgment indicates Butazolidin alka—go with it.

d watch the comeback.



d may reactivate a latent peptic ulcer. The patient should be in- d to take doses immediately before or after meals or with minimize gastric upset. Mild drug rashes frequently subside eduction of dosage. However, rash accompanied by fever or systemic reactions usually requires withholding medication. ic rash has also been reported. Agranulocytosis, exfoliative itis, Stevens-Johnson syndrome, or a generalized allergic re- similar to serum sickness may occur and require permanent awal of medication. Stomatitis, salivary gland enlargement, g, vertigo and languor may occur. Leukemia and leukemoid ns have been reported. While not definitely attributable to the a causal relationship cannot be excluded. Thrombocytopenic a and aplastic anemia may occur. Confusional states, agitation, he, blurred vision, optic neuritis and transient hearing loss have eported, as have hyperglycemia, hepatitis, jaundice, and several of anuria and hematuria. With long-term use, reversible thyroid lasia may occur infrequently. Moderate lowering of the red cell due to hemodilution may occur. 6509-V(B)R2

Butazolidin® alka

Capsules

100 mg. phenylbutazone
100 mg. dried aluminum hydroxide gel
150 mg. magnesium trisilicate
1.25 mg. homatropine methylbromide

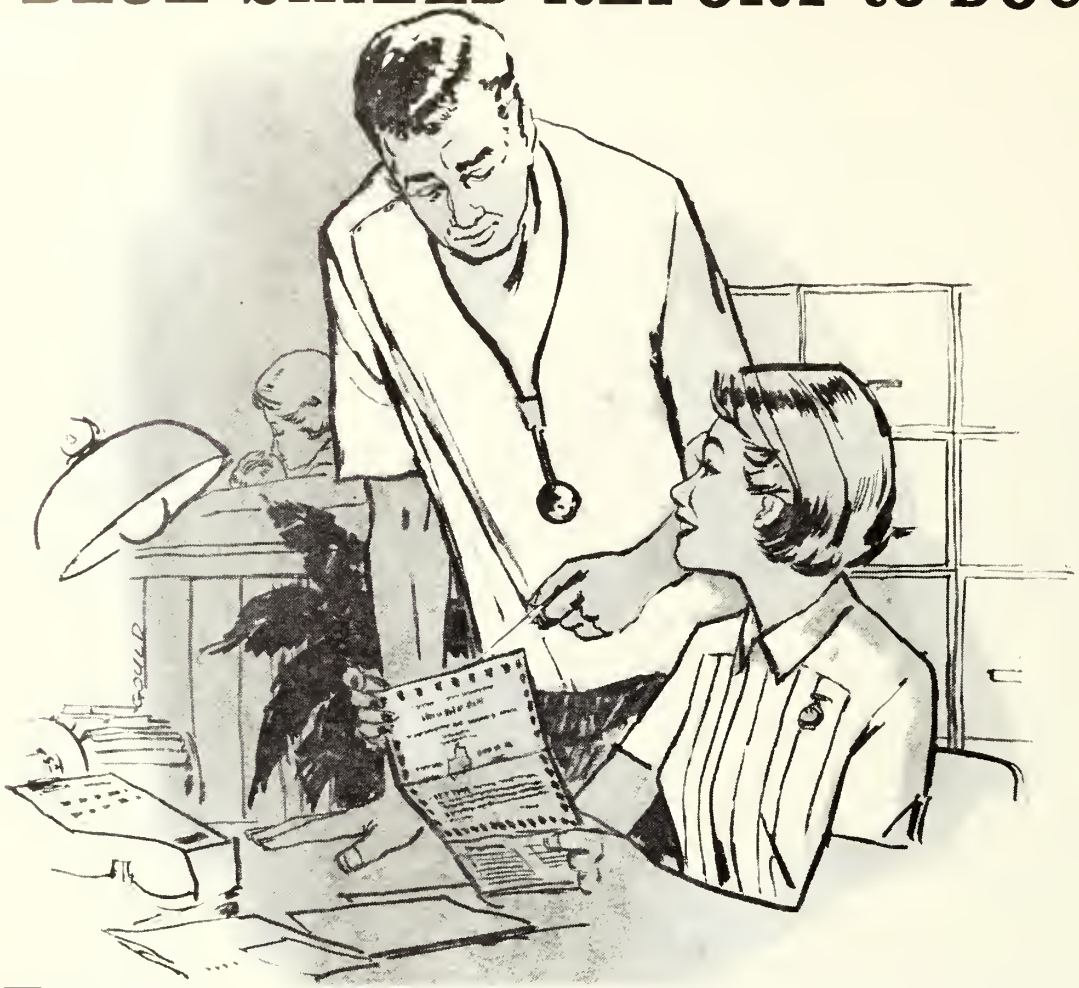
Dosage in painful shoulder: Initial: 3 to 6 capsules daily in 3 or 4 equal doses. Trial period: 1 week. Maintenance dosage should not exceed 4 capsules daily; response is often achieved with 1 or 2 capsules daily.

For complete details, please see full prescribing information.

Geigy Pharmaceuticals
Division of Geigy Chemical Corporation, Ardsley, New York

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A BLUE SHIELD REPORT to DOCTORS



REPORT # 6

"BSB" Blue Shield Contract Out After September 1, 1967

All subscribers enrolled will be automatically upgraded to the "BSA" contract. ($5-$250 schedule.)

Some subscribers may continue to show identification cards that indicate "BSB" after the September change. All claims for this group will be paid according to the "BSA" schedule.

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The AMBAR SCRAPBOOK of Obesity Oddities

FACT & LEGEND



GALLSTONES HAVE BEEN FOUND IN 60% OF PATIENTS WHO WEIGH MORE THAN 300 POUNDS, 45% HAVE DIABETES, AND 15-TO-20% HAVE HIGH BLOOD PRESSURE.

SOURCE: DUNCAN, G.G.: SCIENCE NEWS LETTER, 83:403 (JUNE 29) 1963.

NAPOLÉON BONAPARTE

LOST THE BATTLE OF WATERLOO BECAUSE HE WAS TOO FAT!

ACCORDING TO THE NEW YORK TIMES OF APRIL 13, 1890, THE DEFEAT OCCURRED BECAUSE HE FAILED TO CHECK HIS INTELLIGENCE INFORMATION. "IT WAS A MATTER OF MERE INDOLENCE AND THIS INDOLENCE WAS CAUSED BY FAT."

SOURCE: JAMA 186:65 (OCT. 5) 1963.



THE BOOK ***"PRAY YOUR WEIGHT AWAY"*** URGES READERS TO "ASK GOD TO HELP YOU LIKE EXERCISE" FOR 15 MINUTES A DAY.

SOURCE: REV. C.W. SHEDD: NEW YORK, LIPPINCOTT, 1958.



DIET DROPOUTS ACCORDING TO DRS. SHIPMAN AND PLESSET "APPARENTLY NO DIETER SUCCEEDS WHO IS VERY ANXIOUS OR DEPRESSED."* THE AMBAR FORMULA PROVIDES **METHAMPHETAMINE** TO HELP **ELEVATE** THE **MOOD** AND **PHENOBARBITAL** TO HELP REDUCE **ANXIETY.**

*SOURCE: ARCHIVES OF GENERAL PSYCHIATRY 8:26 (JUNE 1963).

ONTROL FOOD AND MOOD ALL DAY LONG WITH A SINGLE MORNING DOSE

AMBAR #2 EXTENTABS®

methamphetamine HCl 15 mg., phenobarbital 64.8 mg. (1 gr.) (Warning: may be habit forming).

ne Ambar Extentab before breakfast can elp control most patients' appetite for up 12 hours. Methamphetamine, the appe-te suppressant, gently elevates mood and elps overcome dieting frustrations. Pheno-arbital, the sedative in Ambar, controls irritability and nxiety...helps maintain a state of mental calm and equa-mity. Both work together to ease the tensions that erode ie willpower during periods of dieting.

lso available: Ambar #1 Extentabs®—methamphetamine ydrochloride 10 mg., phenobarbital 64.8 mg. (1 gr.) (Warn-g: may be habit forming).

BRIEF SUMMARY/**Indications:** Ambar suppresses appetite and helps offset emotional reactions to dieting. **Contraindications:** Hypersensitivity to barbiturates or sympathomimetics; patients with advanced renal or hepatic disease. **Precautions:** Administer with caution in the presence of cardiovascular disease or hypertension. **Side Effects:** Nervousness or excitement occasionally noted, but usually infrequent at recommended dosages. Slight drowsiness has been reported rarely. See package insert for further details.

A. H. ROBINS COMPANY, RICHMOND, VA. 23220 A·H·ROBINS

Against these three major pathogens…



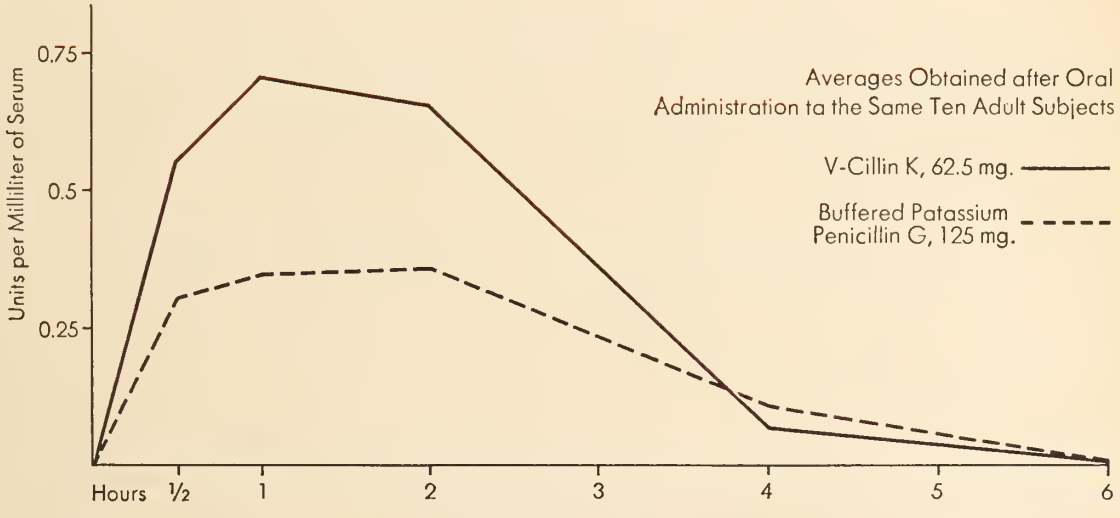
V-Cillin K® provides dependable oral antibacterial activity

because it combines a high degree of in-vitro activity...

Antibiotic	Staph. Aureus (Penicillin-Sensitive) MIC (mcg./ml.) Median	Range	Streptacaccus, Group A MIC (mcg./ml.) Median	Range	Diplacaccus Pneumaniae MIC (mcg./ml.) Median	Range
Penicillin V	0.02	0.02-0.04	0.02	0.003-0.4	0.01	0.005-0.2
Penicillin G	0.02	0.005-1.6	0.005	0.002-0.2	0.02	0.01-0.1
Methicillin	1.6	0.4-6.3	0.2	0.1-0.4	0.2	0.1-1.6
Oxacillin	0.4	0.1-3.1	0.04	0.02-0.4	0.1	0.04-0.8
Cloxacillin	0.2	0.2-0.8	0.1	0.1-0.8	—	—
Nafcillin	0.4	0.2-0.8	0.04	0.02-0.1	0.02	0.02-0.2
Ampicillin	0.2	0.1-0.8	0.02	0.01-0.04	0.02	0.01-0.04

Adapted from Klein, J. O., and Finland, M.: New England J. Med.,269:1019, 1963.

with high blood levels, even in the presence of food



Adapted from Griffith, R. S., and Black, H. R.: Current Ther. Res., 6 253, 1964.

V-Cillin K® Lilly 700867

Potassium Phenoxymethyl Penicillin

(See next page for prescribing information

New 500 mg. tablets...a more convenient way to give high doses



Description: V-Cillin K is the potassium salt of V-Cillin® (phenoxymethyl penicillin, Lilly). This chemically improved form combines acid stability with immediate solubility and rapid absorption. Higher serum levels are obtained more rapidly with this penicillin than with equal oral doses of penicillin G. The higher serum levels and acid stability of V-Cillin K make it a more dependable penicillin for oral use.

V-Cillin K, Pediatric, is an oral solution of clinically proved V-Cillin K in teaspoon dosage form. When mixed as directed, each 5 cc. (approximately one teaspoonful) will contain 125 mg. (200,000 units) phenoxymethyl penicillin as the potassium salt.

Indications: V-Cillin K has been shown to be effective in the treatment of streptococcus, pneumococcus, and gonococcus infections as well as infections caused by sensitive strains of staphylococci. It may be used for the prophylaxis of streptococcus infections in patients with a history of rheumatic fever and for the prevention of bacterial endocarditis after tonsillectomy and tooth extraction in those patients with a history of rheumatic fever or congenital heart disease.

Contraindication: V-Cillin K should not be administered to a patient with a history of penicillin hypersensitivity.

Warnings: In rare instances, the use of penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin and in those with bronchial asthma or other allergies. Resuscitative drugs should be readily available for emergency administration. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for relief of immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: V-Cillin K should be used cautiously, if at all, in a patient with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with hig parenteral dosage schedules, frequent evaluation of the renal an hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory studie (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth o pencillin-insensitive organisms. In such cases, its administration shoul be discontinued, and appropriate measures should be taken.

Adverse Reactions: Although serious allergic reactions are much les common with administration of oral penicillin than with intramusculc forms, manifestations of penicillin allergy may occur.

Penicillin is a substance of low toxicity, but it does possess a signif cant index of sensitization. The following hypersensitivity reactior associated with the use of penicillin have been reported: skin rashe ranging from maculopapular eruptions to exfoliative dermatitis; urt caria; and reactions resembling serum sickness, including chills, feve edema, arthralgia, and prostration. Severe and often fatal anaphylax has occurred (see Warnings). Hemolytic anemia, leukopenia, thror bocytopenia, and nephropathy are rarely observed side-effects ar are usually associated with high parenteral dosage.

Administration and Dosage: For Tablets V-Cillin K and for V-Cillin Pediatric, the usual dosage ranges from 125 mg. (200,000 units) thre times a day to 500 mg. (800,000 units) every four hours. For infant the daily dosage may be 50 mg. per Kg. of body weight divided in three doses.

Beta-hemolytic streptococcus infections without associated ba teremia may be treated with 200,000 to 400,0000 units three times day. Therapy should be continued for a minimum of ten days to preve development of rheumatic fever and/or other serious complicotior Dosage for routine streptococcus prophylaxis in patients with a histo of rheumatic fever or congenital heart disease may be 200,000 un once or twice daily. When such patients undergo tonsillectomy, toc extraction, or other minor surgery, the prophylactic dose should 500,000 units every six hours given two days prior to surgery ond two days postoperatively. If oral medication is not feasible on the d of surgery, parenteral therapy should be considered. Mild to mod ately severe pneumococcus pneumonia has been treated effective with 250 mg. every six hours.

In staphylococcus infections, 400,000 units or more should be giv every six to eight hours in conjunction with indicated surgical pro dures.

For gonorrhea in males, 500 mg. (800,000 units) every four hours three doses may be employed; in females, 500 mg. every four ho for six doses are recommended. Refractory infections generally respo to a second treatment three to four days following completion of first. Treatment of gonorrhea with severe complications should individualized, with prolonged and intensive treatment. Patients wit suspected lesion of syphilis should have a dark-field examinotion fore receiving penicillin and monthly serologic tests for a minimum three months.

How Supplied: Tablets V-Cillin K, U.S.P., 125 mg. (200,000 units) bottles of 50 and 100; and 250 mg. (400,0000 units) and 500 (800,000 units), in bottles of 24 and 100.

V-Cillin K, Pediatric, for Oral Solution, 125 mg. (200,000 units) 5 cc. of solution, in 40, 80, and 150-cc.-size packages. [032

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis, Indiana 46206.

Lilly

70

When the problem is only skin deep

USE 'POLYSPORIN'® brand POLYMYXIN B-BACITRACIN OINTMENT

for topical antibiotic therapy with minimum risk of sensitization

Caution: As with other antibiotic products, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

Supplied in ½ oz. and 1 oz. tubes.

Complete literature available on request from Professional Services Dept. PML.



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What can be done for Susan Jane To stop the runs and crampy pain?

Parepectolin for quick relief of acute diarrhea
...soothes colicky pain with paregoric
...consolidates fluid stools with pectin
...adsorbs irritants with kaolin, and protects intestinal mucosa.

In children, Parepectolin may be used to control diarrhea promptly and prevent dehydration, until etiology has been determined. In some cases, Parepectolin may be all the therapy necessary.

Parepectolin®

Each fluid ounce of creamy white suspension contains:
Paregoric (equivalent)..... (1.0 dram) 3.7 ml.
Contains opium (¼ grain) 15 mg. per fluid ounce.
warning: may be habit forming
Pectin (2½ grains) 162 mg.
Kaolin (specially purified).... (85 grains) 5.5 Gm.
(alcohol 0.69%)
Usual Children's Dose: One or two teaspoonfuls three times daily.

ROER

WILLIAM H. RORER, INC.
Fort Washington, Pa.

VALIUM® (diazepam) Roche®

Before prescribing, please consult complete product information, a summary of which follows:

Contraindications: Infants, patients with history of convulsive disorders, glaucoma or known hypersensitivity to drug.

Warning: Not of value in the treatment of psychotic patients, and should not be employed in lieu of appropriate treatment.

Precautions: Limit dosage to smallest effective amount in elderly or debilitated patients (not more than 1 mg, one or two times daily initially) to preclude ataxia or oversedation, increasing gradually as needed or tolerated. As is true of all CNS-acting drugs, until correct maintenance dosage is established, advise patients against possibly hazardous procedures requiring complete mental alertness or physical coordination. Driving during therapy not recommended. In general, concurrent use with other psychotropic agents is not recommended. If such combination therapy is used, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of Valium (diazepam), such as phenothiazines, barbiturates, MAO inhibitors and other antidepressants. Advise patients against simultaneous ingestion of alcohol or other CNS depressants. Safe use in pregnancy not established. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Observe usual precautions in impaired renal or hepatic function. Periodic blood counts and liver function tests advisable in long-term use. Cease therapy gradually.

Side Effects: Side effects (usually dose-related) are fatigue, drowsiness and ataxia. Also reported: mild nausea, dizziness, blurred vision, diplopia, headache, incontinence, slurred speech, tremor and skin rash; paradoxical reactions (excitement, depression, stimulation, sleep disturbances, acute hyperexcited states, hallucinations); changes in EEG patterns during and after drug treatment. Abrupt cessation after prolonged overdosage may produce withdrawal symptoms (convulsions, tremor, abdominal and muscle cramps, vomiting, sweating) similar to those seen with barbiturates, meprobamate and chlordiazepoxide HCl.

Dosage—*Adults:* Mild to moderate psychoneurotic reactions, 2 to 5 mg b.i.d. or t.i.d.; severe psychoneurotic reactions, 5 to 10 mg t.i.d. or q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; muscle spasm with cerebral palsy or athetosis, 2 to 10 mg t.i.d. or q.i.d. *Geriatric patients:* 1 or 2 mg/day initially, increase gradually as needed and tolerated. (See Precautions)

Supplied: Valium® (diazepam) Tablets, 2 mg, 5 mg and 10 mg; bottles of 50 and 500.

ROCHE

Roche Laboratories
Division of
Hoffmann-La Roche Inc.
Nutley, N.J. 07110



MPORTANT NEW INSIGHTS INTO HUMAN RESPONSE TO EMOTIONAL STRESS:

New confirmation of the effectiveness of Valium® (diazepam)

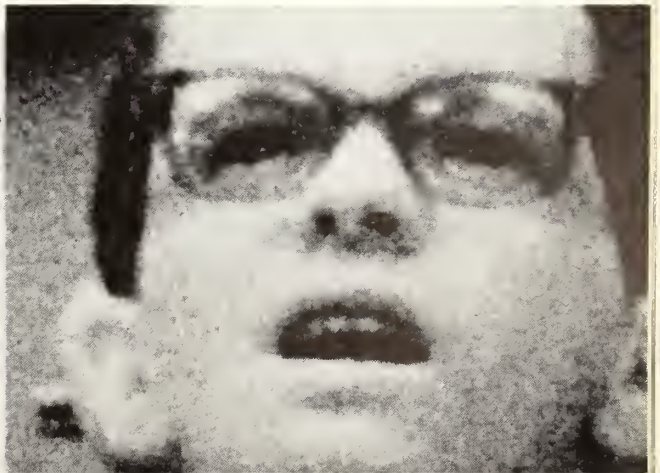
sk your Roche representative to arrange a resentation of this important and fascinating esearch into certain somatic responses to motional stress . . . quantitative, objective easurement with double-blind controls.

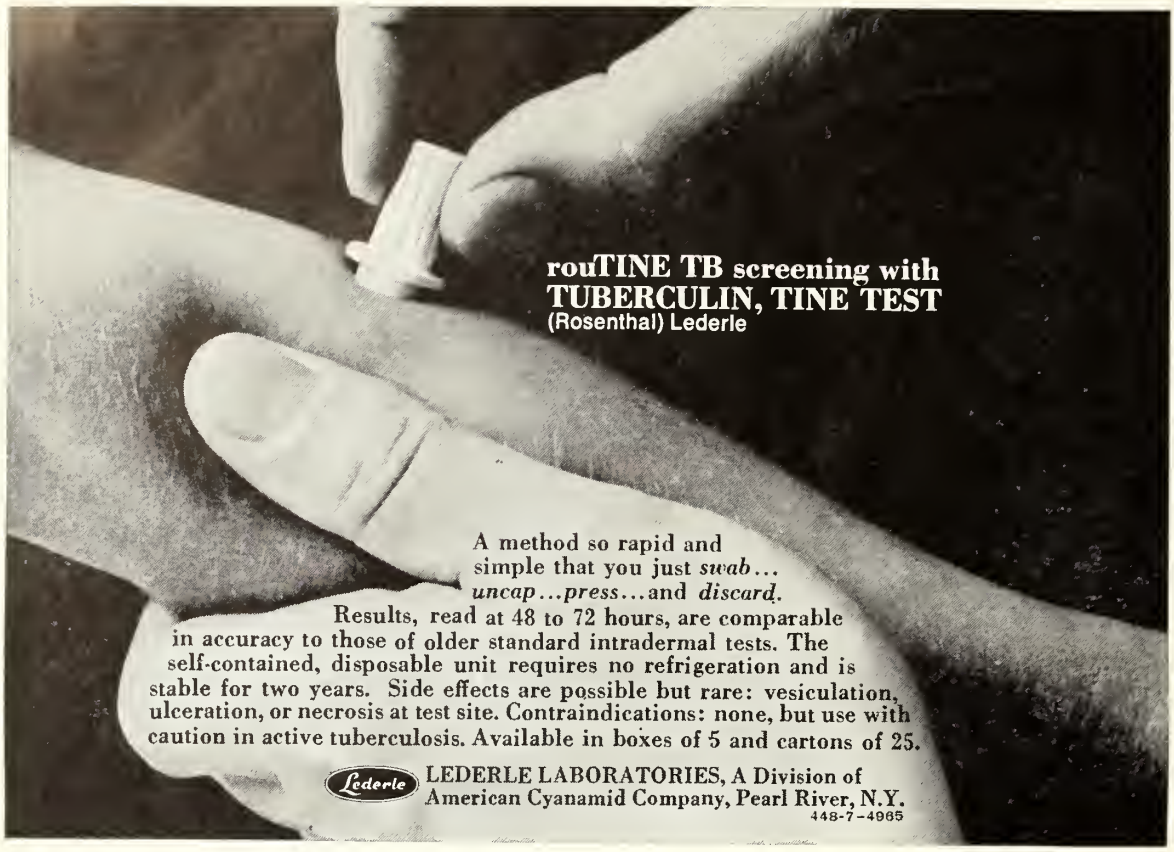
Please see opposite page for important prescribing information.











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Few drugs work as predictably as Dulcolax. You can expect that when your office patient takes Dulcolax at home, it will be as effective as you said it would be. Your patient will be gratified, too.

The reliability of Dulcolax stems from its unique mode of action. The drug works directly on nerve endings in the colonic mucosa, producing normal peristalsis throughout the large intestine. It does not rely on systemic absorption of its effect.

This reliable action provides prompt relief of constipation. It also makes Dulcolax particulary useful for prepping the bowel for special procedures. In short, it makes Dulcolax ideal for your office practice.



Dulcolax acts so surely that the time of evacuation can often be closely predicted. Dulcolax tablets taken at night almost invariably result in a bowel movement soon after waking the following morning. Dulcolax suppositories generally work in 15 to 20 minutes; almost always within the hour.

General Dosage Information. *Adults:* When an ordinary laxative effect is desired, 1 to 3 tablets or 1 suppository usually suffices. Tablets must be swallowed whole, not chewed or crushed, and should not be taken within one hour of antacids or milk. *Children:* 1 or 2 tablets, depending on age and severity of condition. Tablets must not be given to a child too young to swallow them whole. For infants and children under years of age, half a suppository is usually effective. Above this age a whole suppository is usually advisable. Side Effects: As with any cathartic, abdominal cramps are occasionally noted, particularly in severely constipated persons. High dosage may result in loose unformed stools. Contraindication: Contraindicated only in acute surgical abdomen. Availability: Tablets (5 mg.) and suppositories (10 mg.) By prescription or recommendation.

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Geigy Pharmaceuticals
Division of Geigy Chemical Corporation, Ardsley, N.Y.

Geigy

You may be prescribing Hygroton®, chlorthalidone

You usually prescribe one tablet daily, but every once in a while you like to cut the dosage. So instead of giving the 100 mg. tablet every other day or breaking it in half, why not prescribe the new half-strength tablet every day?

See next page for a brief precautionary statement.

but you don't know the half of it.

New Hygroton 50 mg.

For a clinical supply, please mail us this coupon with one of your prescription blanks.

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DEPT. 7

Broad scope diuretic

Hygroton
chlorthalidone

Hygroton is indicated in certain conditions where the newer nonthiazide diuretics are not recommended, e.g. hypertension, edema of pregnancy, premenstrual edema, edema in obesity states, steroid edema.

However, the newer diuretics are probably superior to Hygroton in acute pulmonary edema and the nephrotic syndrome or any condition where the glomerular filtration rate is significantly low.

Geigy

Indications

Hypertension

Such as hypertension with or without congestive failure, where Hygroton can be used alone or in conjunction with other agents

(*Precaution:* Antihypertensive therapy with Hygroton should always be initiated cautiously in post-sympathectomy patients and in patients receiving ganglionic blocking agents or other potent antihypertensive drugs, or curare. Reduce dosage of concomitant antihypertensive agents by at least one-half. Barbiturates, narcotics or alcohol may potentiate hypotension.)

Edema

Such as edema associated with:
congestive heart failure
or renal disease
(*Precaution:* Because of the possibility of progression of renal damage, periodic determination of the BUN is indicated. Discontinue if the BUN rises.)
or hepatic cirrhosis
(Hypoproteinemia, if present, must be corrected concomitantly. *Precaution:* Take special care: discontinue if liver dysfunction is aggravated, since hepatic coma may be precipitated.)
or steroid administration
or obesity
or the premenstrual syndrome
or pregnancy, including toxemia
(*Warning:* Use with caution in pregnant patients, since the drug may cross the placental barrier and adverse reactions which may occur in the adult, e.g. thrombocytopenia, hyperbilirubinemia, altered carbohydrate metabolism, etc., are potential problems in the newborn.)

Contraindications

Severe Renal or Hepatic Disease and Demonstrated Hypersensitivity

Other general warnings, precautions and adverse reactions

Warning: With the administration of enteric-coated potassium supplements, which should be used only when adequate dietary supplementation is not practical, the possibility of small bowel lesions (obstruction, hemorrhage, and perforation) should be kept in mind. Surgery for these lesions has frequently been required and deaths have occurred. Discontinue enteric-coated potassium supplements immediately if abdominal pain, distention, nausea, vomiting, or gastrointestinal bleeding occur.

Precautions: Electrolyte imbalance, sodium and/or potassium depletion may occur. If potassium depletion should occur during therapy, Hygroton should be discontinued and potassium supplements given, provided the patient does not have marked oliguria.

Take special care in severe ischemic heart disease and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended

Adverse reactions: Nausea, gastric irritation, vomiting, anorexia, constipation and cramping, dizziness, weakness, restlessness, hyperglycemia, hyperuricemia, headache, muscle cramps, orthostatic hypotension, aplastic anemia, leukopenia, thrombocytopenia, agranulocytosis, dysuria, impotence, transient myopia, skin rashes, urticaria, purpura, necrotizing angiitis, acute gout, and pancreatitis when epigastric pain or unexplained G.I. symptoms develop after prolonged administration. Other reactions reported with this class of compound include: jaundice, xanthopsia, paresthesia, and photosensitization

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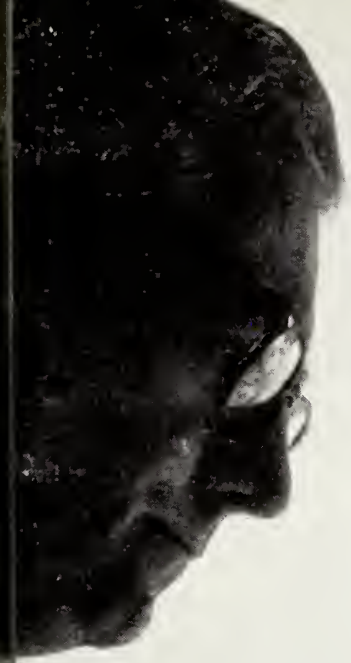
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this issue: smog, smaze or smust...

Smog, smaze or smust...effects of air pollution on upper respiratory tract

Nathan Flaxman, M.D., Diplomate, American Board of Internal Medicine, Chicago, Illinois

In Los Angeles it is *smog* (smoke and fog). In New York City *smaze* (smoke and haze). In El Paso *smust* (smoke and dust). The original factor was smoke plus such natural phenomena as fog, haze and dust, but air pollution has mushroomed from a smoke problem in our industrial cities into a major economic, esthetic and public health problem that affects practically every American locality and citizen.[1,2] Respiratory disease, of course, is by far the most costly effect of air pollution, for contaminated air can aggravate our illnesses, deplete our strength and shorten our life span.[1]

The greatest problem in dealing with solid wastes is that they are not quickly returned to dust. To aid the decomposing process, the great bulk of such waste is burned, polluting our air in the process.[3] Dr. Jack McKee of the California Institute of Technology[4] has calculated that in Los Angeles County, which has more than six million people, about three pounds of gaseous wastes per person per day (on a dry-weight basis) enter the atmosphere. This is twice as much as solid refuse disposal and six times as much as the contaminants in waste water. It is estimated that in New York City, 730 pounds of pollutants, a little over half the size of a compact two-door sedan of foreign make, is annually thrown into the air for each man, woman and child in the city.[5]

Air pollution is an evident factor, not only in the common cold and upper respiratory disease, but also in chronic bronchitis,[2] pulmonary emphysema,[6] bronchial asthma,[7] pneumonitis and lung cancer.[8] Its effect on the incidence of pulmonary tuberculosis is unproved,[9] although it is conceivable that the presence of various materials polluting the air might do this. A siege of smog in Denver, the "mile high city," in December 1965 was accompanied by respiratory infection that doubled normal absentee rates in schools, factories and city government.[10]

While air pollution is only one factor, it has become important in the causes of most of the afflictions of the respiratory tract. This has been shown not only by the Denver occurrence, but also by detailed study[2] of respiratory illness in a small group of 313 men



rom October 1962 to May 1963 when there were 02 episodes involving the upper respiratory tract. The attack rate of illness was related in time to increased concentration of both smoke and sulphur lioxide in the atmosphere of the district in which ne men lived.

)ther factors often mentioned, include exposure to nose who have colds, exposure to extreme changes f temperature, allergy and bacterial infection. Iowever, when low individual resistance due to ack of rest, overwork, fatigue, improper or unbalnced diet, previous illness and emotional stress are ncluded as causes, we enter the realm of somewhat bscure relationships. Much more emphasis can be laced on the role of polluted air.

ne symptoms, signs and complications of involvement of the upper respiratory tract, especially the ommon cold, are the same regardless of the causave factor. Swelling of the lining of the nose, the ratchy dry throat, the discharge from the nose at rst watery then thicker, discolored and more tenaous, the eyes tearing, and frequent sneezing are ll part of the Number 1 human ailment. Concurent or residual sinusitis when mucus is trapped here, middle ear involvement due to interference ith drainage, laryngitis and bronchitis are complitions of the common cold. The primary interfernce is with a most important function of the nose—ne cleansing of foreign matter in the first line of air defense" to prevent it from entering the breathng tract.

lowever, the diagnosis and subsequent decision on ow to treat the patient so affected rests basically on ne relief of symptoms that cause him the misery. he stuffed, runny nose, the clogged ears, and the arsh dry cough—all the symptoms that make comon cold sufferers feel miserable and interfere with neir sleep—can be alleviated with medications of ne oral nasal decongestant/antihistamine combinaon type. The burning sensation in the throat, soreness of the chest and even chest pain can also be relieved by such medication. Rest in bed if there is fever (but confined to home at least), liberal fluids, uniformly warm surroundings and adequate humidity in the room, are all helpful adjuncts to the medication. Most common cold sufferers recover rapidly and are symptom-free in four to ten days.

Further treatment, altered by the fact that the affliction hangs on for more than the usual duration of the common cold, requires consideration of allergy, which is most frequently the prolonging factor. But air pollution itself may often be the culprit.

(Concluded on following page)

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At the Third National Conference on Air Pollution held recently, it was emphasized that this subject had received more attention in the past four years than in all previous history. Spicer,[11] an active participant at this conference, reiterated that it behooves the practicing physician to be aware of trends in respiratory disease and to accept a major role in community action relating to air pollution and respiratory health. By taking a positive stand physicians have been instrumental in the development of anti-pollution legislation. An outstanding example is Los Angeles where major steps have been taken by abolishing coal burning, and even banishing oil burning, seven months a year. Natural gas must be used instead and it must be used by industry when available. Backyard incinerators have been abolished in favor of landfill disposal, and building incineration ended except for a few expensive smokeless furnaces.[10] Concerted action can be taken against particular industrial nuisances. One company that disregarded complaints discovered its error when thousands of its credit cards were returned by irate customers who decided to patronize competing companies.[12]

Summary. Respiratory disease is the most important and most costly effect of air pollution, whether termed smog, smaze, or smust. Air pollution is an economic, esthetic and public health problem that affects practically every American locality and citizen. New sources of air pollution are invisible and odorless, but the harmful gases and liquid droplets are there. Triggered by sunlight, some of these undergo mid-air chemical changes and the results are even more irritating to the upper respiratory tract. The symptoms, signs and complications, especially of the upper respiratory tract, can be readily aborted by modern medication but may be unduly prolonged by polluted air. In steps taken to prevent this, the practicing physician can take a major role.

References 1. Anderson, R. J. Air Pollution, Respiratory Disease and the NTA, W. Virg. M. J., 60:332, 1964. 2. Angel, J. H., Fletcher, C. M., Hill, I. D., and Tinker, C. M. Respiratory Illness in Factory and Office Workers, Brit. J. Dis. Chest, 59:66, 1965. 3. Waste Disposal Problems Grow, Current Municipal Problems, 8:218, 1966. 4. McKee, J. quoted by Hills, G. U.S. War at Home-Fight Against Smog, Chicago Tribune, Sept. 26, 1966. 5. NYC Task Force Revives Concern on Air Pollution, Med. Trib. 7:23 (Sept. 17-18) 1966. 6. Flaxman, N. Pulmonary Emphysema, Med. Trial Tech. Quart. 1960 Annual, p. 221. 7. Heimann, H. Air Pollution and Respiratory Disease, Ann. Allergy 21:396, 1963. 8. Flaxman, N. Pneumonitis and Lung Cancer, Med. Trial Tech. Quart. 1965 Annual, p. 185. 9. Flaxman, N. Pulmonary Tuberculosis, Occupation and Trauma, Med. Trial Tech. Quart. 1959 Annual, p. 237. 10. Hill, G. U.S. War at Home-Fight Against Smog, Chicago Tribune, Sept. 26, 1966. 11. Spicer, W. S., Jr. Relation of Air Pollution to Disease, Arch. Environ. Health, 9:600, 1964. 12. Henderson, C. F. What You Can Do To Combat Air Pollution, Parents' Mag. 41:76, 1966.

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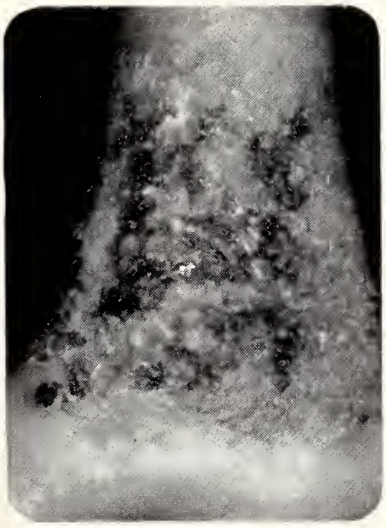
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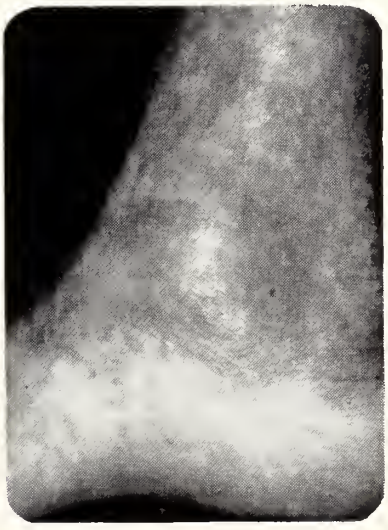
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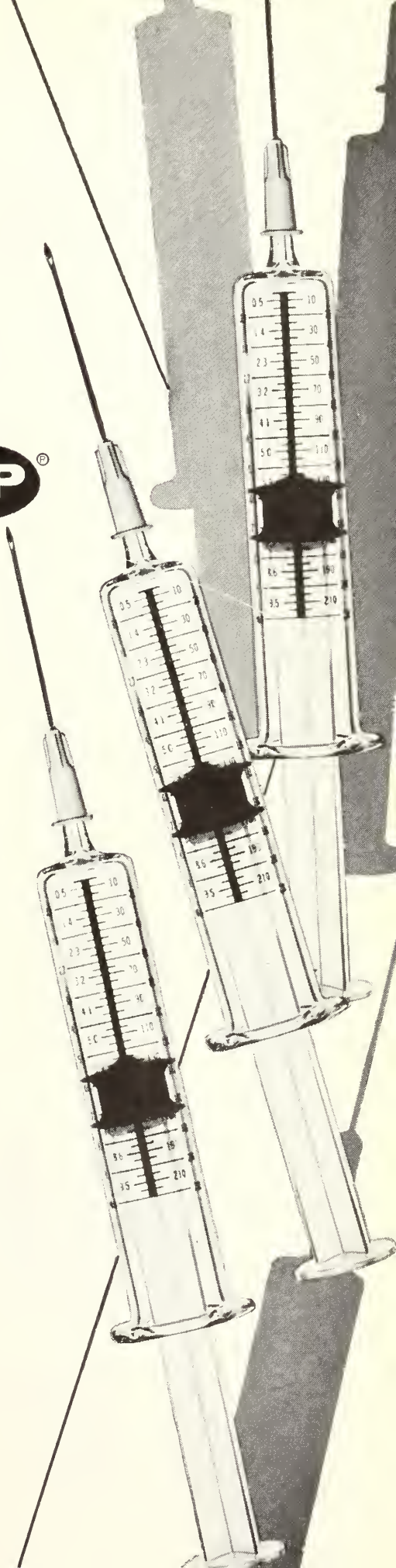
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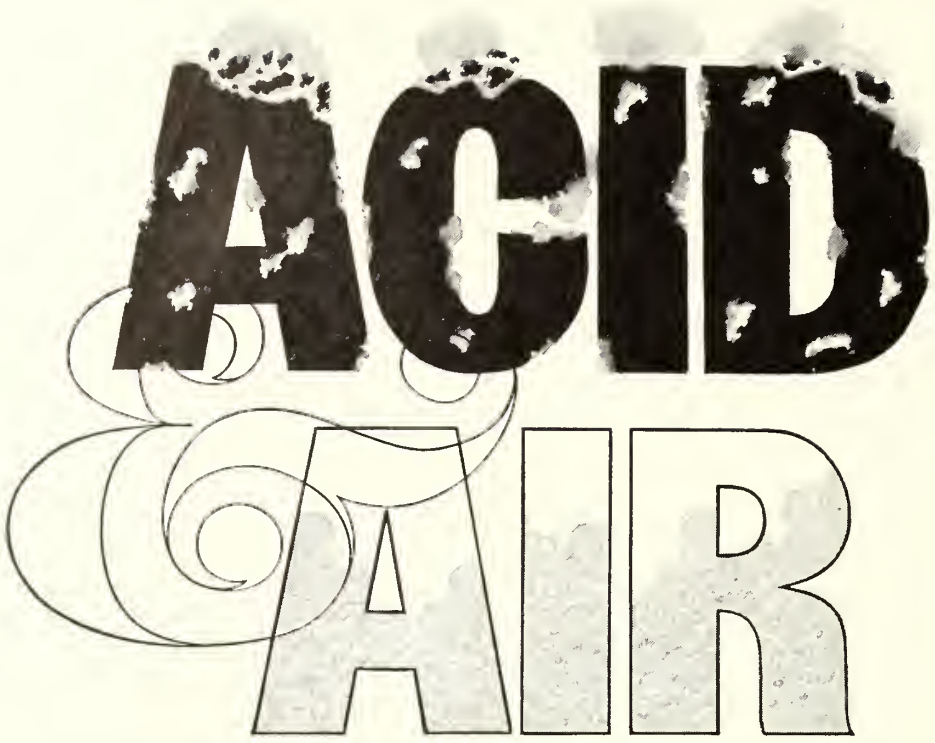
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when bursitis hits a 280-lb. tackle, hit back with Butazolidin alka



Indications: Osteoarthritis, rheumatoid arthritis, rheumatoid spondylitis, psoriatic arthritis, acute gout, painful shoulder (peritendinitis, capsulitis, bursitis and acute arthritis of that joint), acute superficial thrombophlebitis.

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently. Large doses of Butazolidin alka are contraindicated in glaucoma.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Instances of severe bleeding have occurred. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Before prescribing, carefully select patients, avo those responsive to routine measures as well as contraindicate tients. Obtain a detailed history and a complete physical and labo examination, including a blood count. The patient should not e recommended dosage, should be closely supervised and sho warned to discontinue the drug and report immediately if fever, throat, or mouth lesions (symptoms of blood dyscrasia); sudden gain (water retention); skin reactions; black or tarry stools or evidence of intestinal hemorrhage occur. Make regular blood c Discontinue the drug immediately and institute countermeasures white count changes significantly, granulocytes decrease, or imm forms appear. Use greater care in the elderly and in hyperten

Adverse Reactions: The most common are nausea, edema and rash. Swelling of the ankles or face may be minimized by withh dietary salt, reduction in dosage or use of diuretics. In elderly pa and in those with hypertension the drug should be discontinue the appearance of edema. The drug has been associated with per

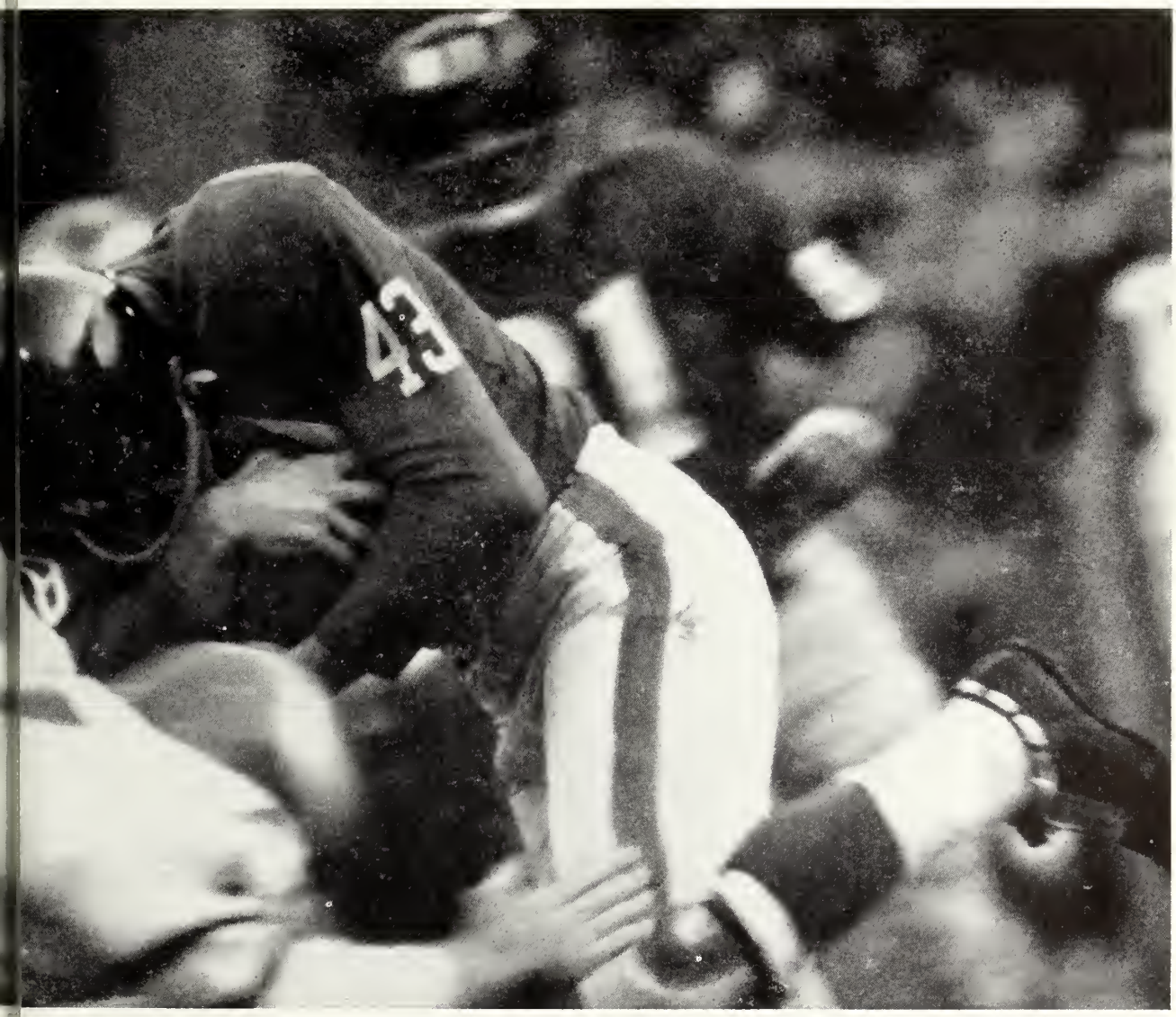
280-lb. tackles—or 108-lb. housewives—Butazolidin alka can hasten recovery from the nizing pain of shoulder bursitis.

ot for every patient. Check carefully the Contraindications, Warning and autions shown below.

adverse reactions may occur. The most common are nausea, edema and rash. ly, agranulocytosis has been reported. All adverse reactions are listed below, too.

-for-pay or workaday patients—when they come up with shoulder bursitis and your cal judgment indicates Butazolidin alka—go with it.

watch the comeback.



may reactivate a latent peptic ulcer. The patient should be in- to take doses immediately before or after meals or with minimize gastric upset. Mild drug rashes frequently subside duction of dosage. However, rash accompanied by fever or ystemic reactions usually requires withholding medication. rash has also been reported. Agranulocytosis, exfoliative tis, Stevens-Johnson syndrome, or a generalized allergic re- similar to serum sickness may occur and require permanent wal of medication. Stomatitis, salivary gland enlargement, , vertigo and languor may occur. Leukemia and leukemoid s have been reported. While not definitely attributable to the causal relationship cannot be excluded. Thrombocytopenic and aplastic anemia may occur. Confusional states, agitation, e, blurred vision, optic neuritis and transient hearing loss have ported, as have hyperglycemia, hepatitis, jaundice, and several f anuria and hematuria. With long-term use, reversible thyroid asia may occur infrequently. Moderate lowering of the red cell ue to hemodilution may occur. 6509-V(B)R2

Butazolidin® alka

Capsules

100 mg. phenylbutazone
100 mg. dried aluminum hydroxide gel
150 mg. magnesium trisilicate
1.25 mg. homatropine methylbromide

Dosage in painful shoulder: Initial: 3 to 6 capsules daily in 3 or 4 equal doses. Trial period: 1 week. Maintenance dosage should not exceed 4 capsules daily; response is often achieved with 1 or 2 capsules daily.

For complete details, please see full prescribing information.

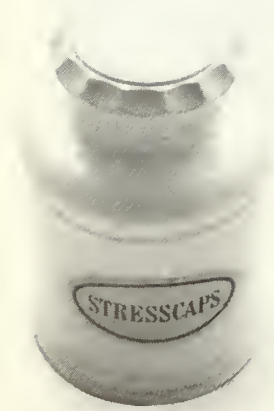
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following infection

B and C vitamins are therapy: STRESSCAPS B and C vitamins in therapeutic amounts... help the body mobilize defenses during convalescence... aid response to primary therapy. The patient with a severe infection, and many others undergoing physiologic stress, may benefit from STRESSCAPS capsules.



Stresscaps®

Stress Formula Vitamins Lederle

FOR PROFESSIONAL RECOMMENDATION ONLY

Each capsule contains:

Vitamin B_1 (as Thiamine Mononitrate)	10 mg
Vitamin B_2 (Riboflavin)	10 mg
Vitamin B_6 (Pyridoxine HCl)	2 mg
Vitamin B_{12} Crystalline	4 mcgm
Vitamin C (Ascorbic Acid)	300 mg
Niacinamide	100 mg
Calcium Pantothenate	20 mg

Recommended intake: Adults, 1 capsule daily, for the treatment of vitamin deficiencies. Supplied in decorative "reminder" jars of 30 and 100; bottles of 500.

LEDERLE LABORATORIES, A Division of American Cyanamid Company, Pearl River, New York

Lederle

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A breakthrough in the control of pain

Talwin®

brand of

pentazocine

(as lactate)

**a potent injectable non-narcotic—
may be used in place of morphine
and other narcotic analgesics**



A breakthrough in the control of pain

Talwin®

brand of

pentazocine

(as lactate)

a potent injectable non-narcotic—may be used in place of morphine and other narcotic analgesics

Talwin 30 mg. relieves pain usually as quickly and effectively as morphine 10 mg.*

whatever the intensity of the pain

whatever the cause of the pain

whatever the site† of the pain

whatever the chronicity of the pain

whatever the age†† of the patient

without the liability of narcotics

without the development of tolerance on prolonged use

with less risk of severe respiratory depression than with morphine

with less constipation

with less urinary retention

Clinical experience of more than 150 investigators with over 12,000 patients given varying dosages of Talwin shows that this potent injectable analgesic is not a narcotic.

Talwin has less risk of severe respiratory depression, urinary retention, and constipation than morphine—a great boon for postsurgical patients.

Talwin produces less nausea, vomiting and diaphoresis than meperidine.

Constipation and urinary retention are seldom a problem with Talwin.

Very rarely do hallucinations or disorientation occur (0.1% each).

No significant hepatic, renal, hematopoietic or neurologic disturbances have been reported.

Talwin is well tolerated even by the aged or very ill patients.

Used during active labor, its tolerance by the mother and newborn is comparable to meperidine's. As with all new drugs, Talwin should be used with caution in pregnant women and in women delivering premature infants.

Tolerance to the analgesic effect of Talwin has not developed with prolonged use.

Talwin gives significant relief of pain in from 15 to 20 minutes following I.M. or S.C. injection.

Talwin relieves pain usually for 3 hours or longer with a single injection; however, the duration may sometimes be less than with morphine.

*Its duration of action may sometimes be less than that of morphine.

†Should not be used for patients with increased intracranial pressure, head injury or pathologic brain conditions.

††Until sufficient experience is gained, Talwin should not be administered to children under 12 years of age.

86 per cent of medical and surgical patients obtained excellent to good relief with Talwin 30 mg. administered parenterally

Talwin

brand of pentazocine (as lactate)

used for pain of all types

Talwin has a wide range of usefulness in surgery

Types of surgical use	Number of patients	Efficacy				
		% Exc.	% Good	Exc. + Good	% Fair	% Poor
• Preoperative	118	31	52	83%	15	2
• Postoperative	914	58	28	86%	8	6
• Pre- and postoperative	12	75	17	92%	0	8
• Minor surgery	33	30	39	69%	0	31
• Traumatic	14	64	29	93%	7	0
• Dental	33	67	24	91%	3	6
Total patients.....1124						

Efficacy of 30 mg. Talwin I.M. and S.C. as related to types of surgical use in a cooperative study

Data in files of Department of Medical Research, Winthrop Laboratories.

High incidence of poor results in minor surgery is due primarily to one study involving change of burn dressings in children; 9 of 19 patients obtained poor results with dose used.

Talwin relieves all types of pain in acute and chronic medical disorders

Type of medical pain	Number of patients	Percentage of relief				
		Excellent	Good	Exc. + Good	Fair	Poor
Malignancy, pain in	161	44	37	81%	8	11
Orthopedic; see also "Arthritis"	111	53	38	91%	5	4
Cardiovascular pain; see also "Miscellaneous medical"	96	59	27	86%	6	7
Genitourinary pain	83	42	33	75%	16	10
Arthritis	76	33	51	84%	12	4
Gynecologic pain	35	57	34	91%	6	3
Cephalalgia	21	45	41	86%	9	5
Gastrointestinal pain	19	89	5	94%	0	5
Chest, including • Pleurisy • Pulmonary embolism and infarct • Lung abscess	12	83	17	100%	0	0
Miscellaneous medical, including • Peripheral vascular disease • Thrombophlebitis • Cervical root pain • Facial neuralgia • Syringomyelia • Burns	108	50	39	89%	9	2
Total patients..... ...722						

Efficacy of 30 mg. Talwin I.M. and S.C. as related to types of medical pain in a cooperative study

Data in files of Department of Medical Research, Winthrop Laboratories.

See next page for additional product information

Talwin relieves pain as quickly as morphine

A comparison of Talwin 30 mg. and morphine 10 mg. I.M. in controlling postoperative pain*

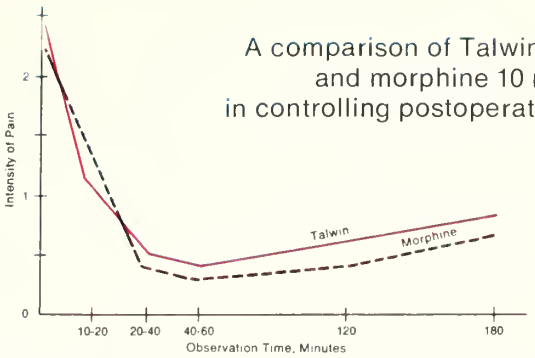


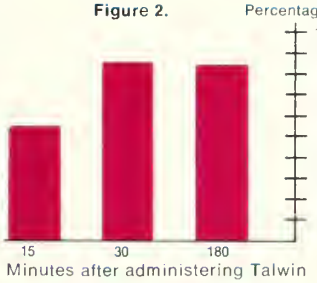
Figure 1.

Talwin 30 mg. proved equivalent to morphine 10 mg. in overall analgesic efficacy. During the early postmedication period (up to 40 minutes after drug injection), Talwin was superior in effect to morphine.

After observation periods ranging from 40 to 180 minutes there was no difference between the drugs in their effect on intensity. There were 141 and 119 complete patient records for Talwin and morphine, respectively, in this double-blind study. Other clinical investigators, studying duration, state that relief with Talwin may be obtained for up to three hours or longer, a period sometimes less than morphine's.

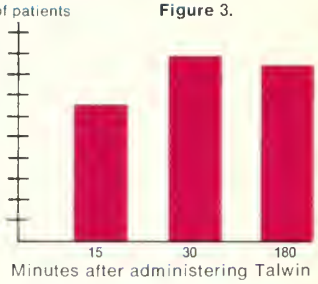
Talwin is as effective for severe pain (Fig. 2) as for moderate pain (Fig. 3)

Figure 2.



Per cent excellent to good relief of severe pain obtained with 30 mg. Talwin in 218 postoperative patients

Figure 3.



Per cent excellent to good relief of moderate pain obtained with 30 mg. Talwin in 203 postoperative patients

Talwin does not require a narcotics prescription or narcotics records

The World Health Organization Expert Committee on Dependence-Producing Drugs concluded that "...there was no need at this time for narcotics control of pentazocine [Talwin] internationally or nationally."‡

Storer, E. H. Data in the files of the Sterling-Winthrop Research Institute.

†Cooperative study, data in the files of the Department of Medical Research, Winthrop Laboratories.

‡*World Health Organization Technical Report Series*, No. 343, 1966, p. 6

A breakthrough in the control of pain

Talwin®

brand of

pentazocine

(as lactate)

a potent injectable non-narcotic — may be used in place of morphine and other narcotic analgesics

Contraindications: *Increased Intracranial Pressure, Head Injury, or Pathologic Brain Conditions in which clouding of sensorium is undesirable.* Talwin (brand of pentazocine) should not be administered in these cases, since drug-induced sedation, dizziness, nausea, or respiratory depression could be misleading.

Precautions: *Pregnancy.* No teratogenic or embryotoxic effects attributable to the use of Talwin have been seen in extensive reproductive studies in animals; however, like all new drugs, Talwin should be given with caution to pregnant women. A large number of patients in labor have received the drug with no adverse reactions other than those that occur with commonly used strong analgesics. However, as with other strong analgesics, Talwin should be used with caution in women delivering premature infants.

Ambulatory Patients. Since sedation, dizziness, and occasional euphoria have been noted, ambulatory patients should be warned not to operate machinery, drive cars, or unnecessarily expose themselves to hazards.

Certain Respiratory Conditions. The possibility that Talwin (brand of pentazocine) may cause respiratory depression should be considered in treatment of patients with bronchial asthma. Talwin should be administered only with caution and in low dosage to patients with respiratory depression (e.g., from other medication, uremia, or severe infection), obstructive respiratory conditions, or cyanosis.

Patients Dependent on Narcotics. Because Talwin is a narcotic-antagonist, patients dependent on narcotics and receiving Talwin may occasionally experience certain withdrawal symptoms. Talwin should be given with special caution to such patients. It has been observed that some patients previously given narcotic-analgesics for one month or longer had mild withdrawal symptoms when the drug was replaced with the analgesic, Talwin. After a short period of adjustment the subjects were usually able and willing to continue taking Talwin, and relief of pain was satisfactory.

Nonaddicted Patients Receiving Narcotics. Symptoms believed to be indicative of antagonism to the opiate may be observed rarely with administration of Talwin to patients receiving opiates for a short time. Intolerance or untoward reactions are seldom observed after administration of Talwin to patients who have received single doses or who have had limited exposure to narcotics.

Impaired Renal or Hepatic Function. Although laboratory tests have not indicated that Talwin (brand of pentazocine) causes or increases renal or hepatic impairment, the drug should be administered with caution to patients with such impairment. Extensive liver disease appears to predispose to greater side effects (e.g., marked apprehension, anxiety, dizziness, sleepiness) from the usual clinical dose, and may be the result of decreased metabolism of the drug by the liver.

Myocardial Infarction. As with all drugs, Talwin (brand of pentazocine) should be used with caution in patients with myocardial infarction who have nausea or vomiting.

Biliary Surgery. Until further experience is gained with the effects of Talwin on the sphincter of Oddi, the drug should be used with caution in patients about to undergo surgery of the biliary tract.

Adverse Effects: Talwin is relatively free from the undesirable side effects associated with morphine, such as constipation, urinary retention, or severe respiratory depression. Furthermore, Talwin produces less nausea, vomiting, and diaphoresis than meperidine.

In over 12,000 patients who received Talwin intramuscularly, subcutaneously, or intravenously, nausea, the most frequent adverse effect, occurred in approximately 5.0 per cent. In decreasing order of occurrence were vertigo, dizziness or lightheadedness; vomiting; and euphoria. Respiratory depression was reported as an adverse reaction in 1.0 per cent.

The incidence of each of the other adverse effects was well below 1.0 per cent: constipation, circulatory depression, diaphoresis, urinary retention, alteration in mood (nervousness, apprehension, depression, floating feeling), hypertension, sting on injection, headache, dry mouth, flushed skin including plethora, altered uterine contractions during labor, dermatitis including pruritus, dreams, paresthesia, and dyspnea occurred rarely after administration of Talwin (brand of pentazocine). Furthermore, each of the following adverse reactions occurred in less than 0.1 per cent: tachycardia, visual disturbance (blurred vision, diplopia and nystagmus), hallucinations, disorientation, weakness or faintness, muscle tremor, chills, allergic reactions including edema of the face, taste alteration, insomnia, diarrhea, cramps, and miosis; laryngospasm in one patient.

Talwin has not produced severe respiratory embarrassment in adults (never apnea), even with large amounts. A small number of newborn infants whose mothers received Talwin during labor had transient apnea. The incidence of temporary diminution in the rate or strength of uterine contractions is low after administration of Talwin, similar to that following meperidine hydrochloride. (In reporting no interference with normal labor in patients receiving Talwin, one investigator further stated that the drug may increase uterine activity.) Generally, no significant fetal heart rate change occurs.

Laboratory tests of blood and of liver and kidney functions have revealed no significant abnormalities. A minimum and probably insignificant increase in the per cent of eosinophils in peripheral blood counts and bone marrow occurred occasionally.

Talwin is well tolerated by patients with diabetes mellitus, and no changes in insulin requirements have been observed.

Dosage and Administration: *Adults, Excluding Patients in Labor.* Average recommended single parenteral dose is 30 mg., by intramuscular, subcutaneous, or intravenous route; may be repeated every three to four hours. Pain has been relieved in most patients with not more than three doses daily. Infrequently, selected patients have received single doses as high as 60 mg.

Patients in Labor. A single, intramuscular 30 mg. dose has been most commonly administered. An intravenous 20 mg. dose has given adequate pain relief to some patients in labor when contractions become regular, and this dose may be given two or three times at two- to three-hour intervals, as needed.

Children Under 12 Years of Age. Since clinical experience in children under twelve years of age is limited, the use of Talwin (brand of pentazocine) in this age group is not recommended.

Duration of Therapy. Patients with chronic pain who received Talwin for prolonged periods (e.g., over 300 days) experienced no withdrawal symptoms even when administration was stopped abruptly; furthermore, there was no tolerance to the analgesic effect.

CAUTION. Talwin should not be mixed in the same syringe with soluble barbiturates because precipitation will occur.

Treatment of Overdosage or Respiratory Depression. Talwin has not produced apnea or severe respiratory embarrassment in adults, even in large doses. Occasionally, however, moderate respiratory depression may occur. Means of maintaining proper oxygenation should be available in case of overdosage or respiratory depression, and methylphenidate (Ritalin®) should be administered parenterally. The usual narcotic-antagonists, such as nalorphine, are not effective respiratory stimulants for depression due to Talwin.

How Supplied: Ampuls of 1 ml., containing Talwin® (pentazocine) as lactate equivalent to 30 mg. base and 2.8 mg. sodium chloride, in Water for Injection. **Boxes of 10, 25, and 100.**

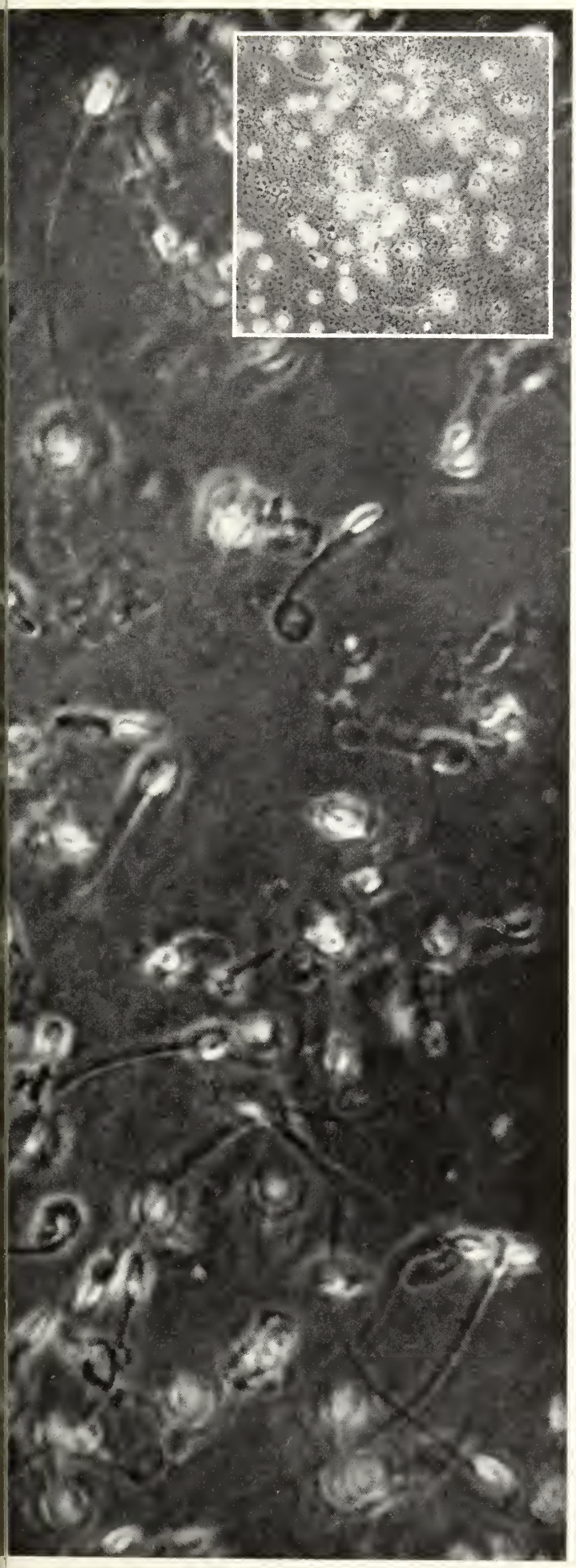
Multiple dose vials of 10 ml., each 1 ml. containing Talwin® (pentazocine) as lactate equivalent to 30 mg. base, 2 mg. acetone sodium bisulfite, 1.5 mg. sodium chloride, and 1 mg. methylparaben as preservative, in Water for Injection. **Boxes of 1.**

The pH of Talwin solutions is adjusted between 4 and 5 with lactic acid and sodium hydroxide.

Winthrop

Winthrop Laboratories, New York, N.Y. 10016

PRINTED IN U.S.A. ISSUED AUGUST, 1967 1035M1



New view of an oral contraceptive at work

Although suppression of ovulation remains the primary mode of action of oral contraceptives, newer knowledge indicates that products like Norinyl-1 — a combination of both low-dosage progestogen and estrogen for the full treatment cycle — may provide multiple action that helps explain their unexcelled record of contraceptive effectiveness. This report explores the possible secondary protective mechanisms offered by combined hormonal administration.

Accumulating evidence has indicated that sparse, highly viscous cervical mucus has a possible adverse effect on the motility and survival of spermatozoa.

The estrogen-opposing progestational ingredient of Norinyl-1 (norethindrone 1 mg. with mestranol 0.05 mg.) changes the usual mid-cycle picture of a thin, watery cervical mucus. The result — a built-in barrier that appears to inhibit sperm from reaching the ovum should one be released. The inset in the adjoining photograph shows immobile spermatozoa as they appear in cervical mucus taken from a patient treated with Norinyl-1.

See last page for contraindications, precautions, side effects and dosage.

How the estrogen-opposing action of Norinyl-1 creates cervical mucus that may be hostile to sperm penetration

Normally, estrogen activity during the fertile midcycle stimulates the production of a profuse and watery cervical mucus that permits maximum sperm motility and promotes penetration.

But what happens when Norinyl-1 is administered? Its potent progestogen, norethindrone, opposes estrogen stimulation of cervical mucus. Consequently, the amount of mucus decreases and its viscosity increases. This results in a sparse but thick mucus barrier that appears to diminish the vitality of the sperm and to impair its powers of penetration.

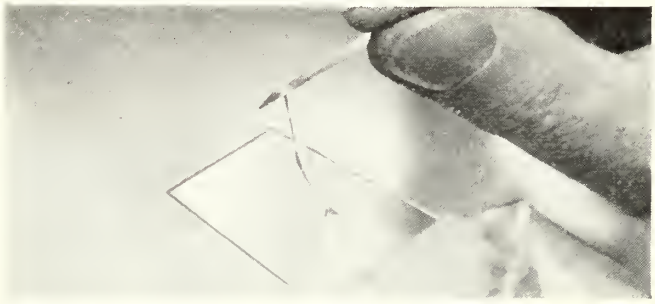
The role of viscous cervical mucus as a secondary action of Norinyl-1

In a report on 89 patients taking this medication,* cervical mucus obtained from cycle day 5 to cycle day 29 appeared scant and thick and exhibited little or no Spinnbarkeit.

In the opinion of this investigator, the effect on cervical mucus may be sufficient to prevent conception.

*Cohen, M. R.: Symposium: Mechanisms of Action of Low Dosage Oral Contraceptive, Yale University Medical Center, New Haven, Conn., April 6, 1967.

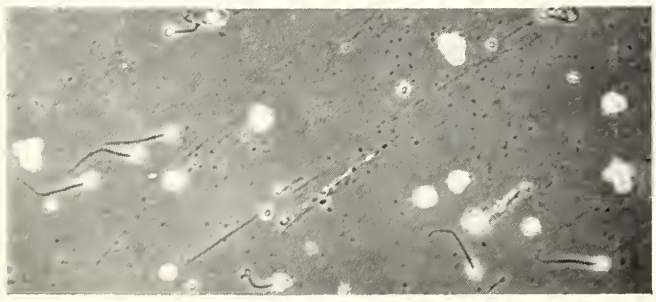
Normal cervical mucus at midcycle in untreated patient is known to permit sperm motility... promote sperm penetration.



Cervical mucus is thin and watery with a stretchability (Spinnbarkeit) of 15 to 20 cm.



Thin, watery mucus crystallizes into this well-defined, fernlike pattern within a minute.

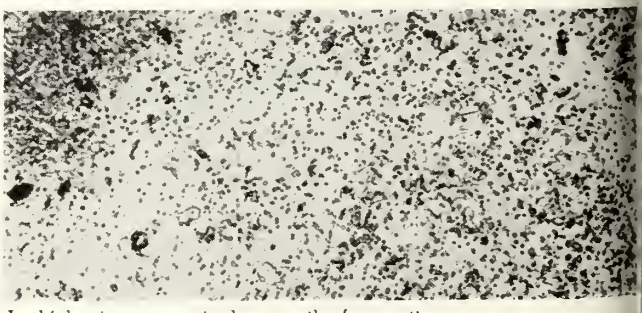


Spermatozoa appear healthy, are active and freemoving.

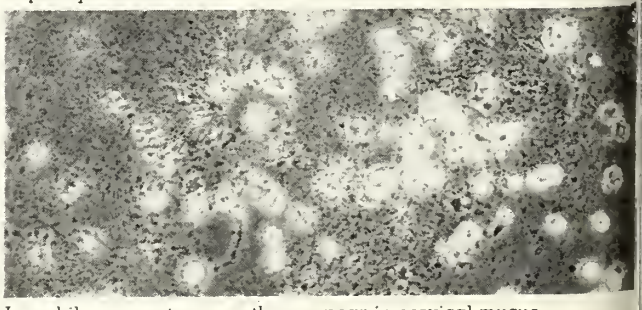
Viscous cervical mucus at midcycle produced by Norinyl-1 appears to impair sperm vitality... inhibit penetration.



Cervical mucus is scanty, thick and viscous. Spinnbarkeit is 1 cm. or less.



In thick, viscous cervical mucus the fern pattern is poorly defined or absent.

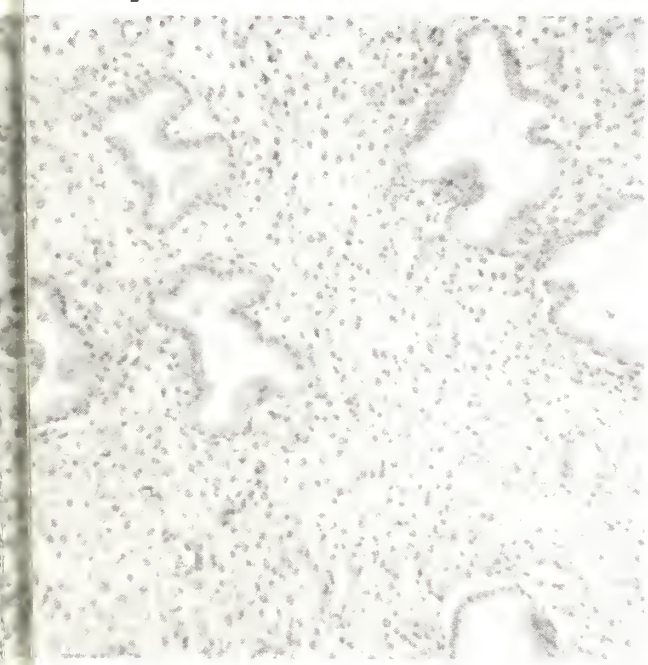


Immobile spermatozoa as they appear in cervical mucus taken from a patient treated with Norinyl-1.

How Norinyl-1 alters normal endometrial responses– another possible protective mechanism

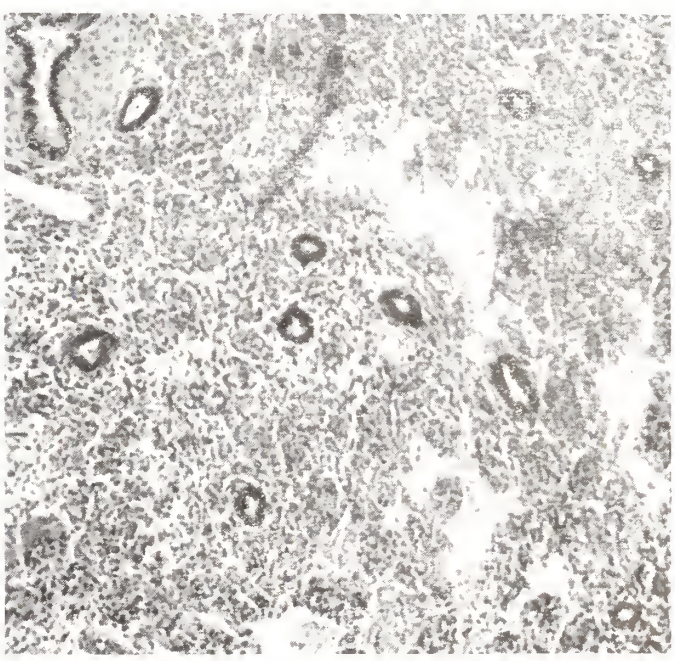
Let us suppose that an ovum is released – as occurs in an occasional, rare case – and somehow a sperm succeeds in penetrating the cervical mucus barrier. Should this come about, the additional action of Norinyl-1 may protect the patient from unwanted pregnancy. The theory is that progestogen intake makes endometrial tissue unreceptive to implantation.

Endometrium of untreated patient



Normally, the endometrium progresses through a proliferative phase stimulated by estrogen and a secretory phase stimulated by progesterone. During the secretory phase the endometrium is receptive to the fertilized ovum.

Endometrium produced by Norinyl-1



When Norinyl-1 is administered its progestogen component – norethindrone – accelerates the secretory phase and suppresses glandular and vascular development.

new Norinyl-1 tablets

(norethindrone 1mg ☐ mestranol 0.05mg)

See 1st page for contraindications, precautions, side effects and dosage.

effective fertility control
on half the previous dosage

maintains ratio
of the established
norethindrone/mestranol
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Reduction of oral contraceptive dosage to lowest effective levels has become a well-accepted principle of conservative medical practice. In keeping with this view, Norinyl is now available in a new strength in which *both* norethindrone and mestranol are reduced 50 percent. Studies show that Norinyl-1 achieves fertility control with only 1.05 mg. of combined progestogen and estrogen per tablet.

Norethindrone was first reported for use as a progestational agent in human beings in 1955. Norethindrone 2 mg. with mestranol 0.1 mg., as an oral contraceptive, is currently in use by over 2,000,000 women. Clinical experience now establishes that Norinyl-1 also amply meets the criteria of reliability and safety.*

*Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965.

PRESCRIBING INFORMATION

Contraindications: 1. Patients with thrombophlebitis or with a history of thrombophlebitis or pulmonary embolism. 2. Liver dysfunction or disease. 3. Patients with known or suspected carcinoma of the breast or genital organs. 4. Undiagnosed vaginal bleeding.

Warnings: 1. Discontinue medication pending examination if there is sudden partial or complete loss of vision or if there is a sudden onset of proptosis, diplopia, or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn. 2. Since the safety of Norinyl-1 in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods, pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule, the possibility of pregnancy should be considered at the time of the first missed period. 3. Detectable amounts of the active ingredients in oral contraceptives have been identified in the milk of mothers receiving these drugs. The significance of this dose to the infant has not been determined.

Precautions: 1. The pretreatment physical examination should include special reference to breast and pelvic organs, as well as a Papanicolaou smear. 2. Endocrine and possibly liver function tests may be affected by treatment with Norinyl-1. Therefore, if such tests are abnormal in a patient taking Norinyl-1, it is recommended that they be repeated after the drug has been withdrawn for 2 months. 3. Under the influence of estrogen-progestogen preparations, preexisting uterine fibroids may increase in size. 4. Because these agents may cause some degree of fluid retention, conditions that may be influenced by this factor, such as epilepsy, migraine, asthma, cardiac, or renal dysfunction, require careful observation. 5. Although a cause and effect relationship has not been established, Norinyl-1 should be used with caution in patients with a history of cerebrovascular accident. 6. In relation to breakthrough bleeding, as in all cases of irregular bleeding *per vaginam*, nonfunctional causes should be borne in mind. In cases of undiagnosed vaginal bleeding, adequate diagnostic measures are indicated. 7. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. 8. Any possible influence of prolonged Norinyl-1 therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. 9. A decrease in glucose tolerance has been observed in a small percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving Norinyl-1 therapy. 10. Because of the occasional occurrence of thrombophlebitis and pulmonary embolism in patients taking oral contraceptives, the physician should be alert to the earliest manifestations of the disease. A cause and effect relationship has not been demonstrated. 11. Because of the effects of estrogens on epiphyseal closure, Norinyl-1 should be used judiciously in young patients in whom bone growth is not complete. 12. The age of the patient constitutes no absolute limiting factor, although treatment with Norinyl-1 may mask the onset of the climacteric. 13. The pathologist should be advised of Norinyl-1 therapy when relevant specimens are submitted.

Side Effects: The following adverse reactions have been observed with varying incidence in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms, breakthrough bleeding, spotting, change in menstrual flow, amenorrhea, edema, chloasma, breast changes (tenderness, enlargement and secretion), loss of scalp hair, change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately postpartum, cholestatic jaundice, erythema multiforme, erythema nodosum, hemorrhagic eruption, migraine, rash (allergic), itching, rise in blood pressure in susceptible individuals, mental depression.

The following occurrences have been observed in users of oral contraceptives. A cause and effect relationship has not been established: thrombophlebitis, pulmonary embolism, neurooocular lesions.

The following laboratory results may be altered by the use of oral contraceptives: increased bromsulphalein retention and other hepatic function tests, coagulation tests (increase in prothrombin, factors VII, VIII, IX and X), thyroid function (increase in PBI and butanol extractable protein-bound iodine and decrease in T^3 values), metapyrone test, pregnanediol determination.

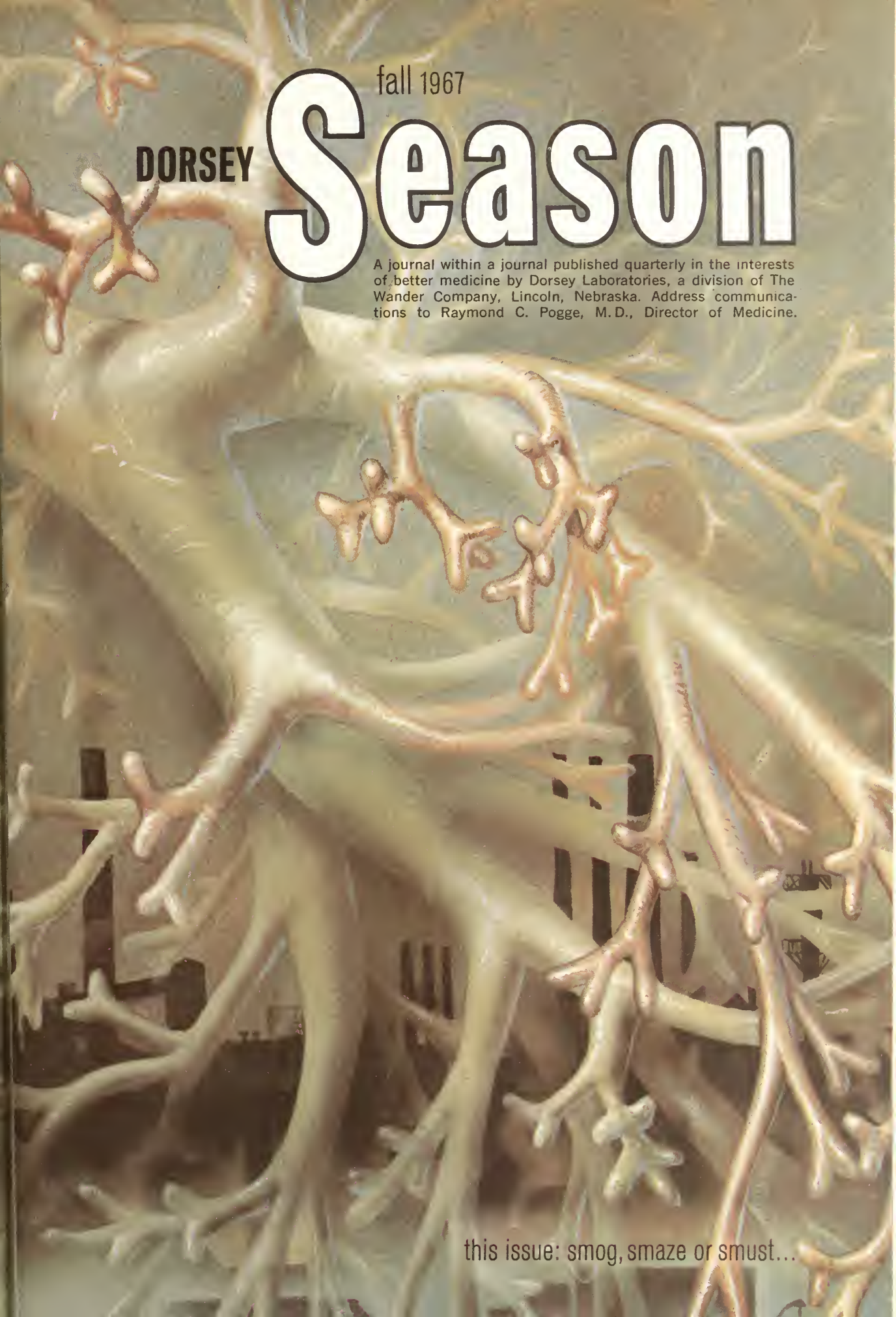
Other side effects reported to have occurred in association with use of this drug are dizziness, hirsutism, pains in legs, back, chest and abdomen, dysuria, drowsiness, vaginal discharge, libido increased and decreased, eruptions, hypermenorrhea, hypomenorrhea, increased appetite, G.U. infections, varicose veins, abdominal fullness, acne, headache, nervousness, allergies, blurred vision, pain in eyes, and itching in eyes. *For complete clinical data, see package insert.*

Dosage and Administration: 1. One tablet of Norinyl-1 is administered orally for 20 days beginning on day 5 of the menstrual cycle. (Count day 1 of the cycle as the first day of menstrual bleeding.) Repeat this dosage schedule for each cycle. 2. If no menstrual period occurs after a cycle of treatment (20 tablets) in which patient adhered to the schedule, the patient must be instructed to resume taking the Norinyl-1 tablets 7 days after the previous 20 day course was completed. For example, if the last pill of a previous cycle had been taken on a Sunday, then a new cycle of treatment should begin on the following Sunday. 3. In the postpartum woman, it is recommended that the first cycle of treatment should begin on day 5 of the first menstrual cycle. However, Norinyl-1 should not be administered during lactation.

Availability: Norinyl-1 (norethindrone 1 mg. with mestranol 0.05 mg.)—Dispensers of 20 and 60 and bottles of 250 tablets.

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this issue: smog, smaze or smust...

Smog, smaze or smust...effects of air pollution on upper respiratory tract

Nathan Flaxman, M.D., Diplomate, American Board of Internal Medicine, Chicago, Illinois

In Los Angeles it is *smog* (smoke and fog). In New York City *smaze* (smoke and haze). In El Paso *smust* (smoke and dust). The original factor was smoke plus such natural phenomena as fog, haze and dust, but air pollution has mushroomed from a smoke problem in our industrial cities into a major economic, esthetic and public health problem that affects practically every American locality and citizen.[1,2] Respiratory disease, of course, is by far the most costly effect of air pollution, for contaminated air can aggravate our illnesses, deplete our strength and shorten our life span.[1]

The greatest problem in dealing with solid wastes is that they are not quickly returned to dust. To aid the decomposing process, the great bulk of such waste is burned, polluting our air in the process.[3] Dr. Jack McKee of the California Institute of Technology[4] has calculated that in Los Angeles County, which has more than six million people, about three pounds of gaseous wastes per person per day (on a dry-weight basis) enter the atmosphere. This is twice as much as solid refuse disposal and six times as much as the contaminants in waste water. It is estimated that in New York City, 730 pounds of pollutants, a little over half the size of a compact two-door sedan of foreign make, is annually thrown into the air for each man, woman and child in the city.[5]

Air pollution is an evident factor, not only in the common cold and upper respiratory disease, but also in chronic bronchitis,[2] pulmonary emphysema,[6] bronchial asthma,[7] pneumonitis and lung cancer.[8] Its effect on the incidence of pulmonary tuberculosis is unproved,[9] although it is conceivable that the presence of various materials polluting the air might do this. A siege of smog in Denver, the "mile high city," in December 1965 was accompanied by respiratory infection that doubled normal absentee rates in schools, factories and city government.[10]

While air pollution is only one factor, it has become important in the causes of most of the afflictions of the respiratory tract. This has been shown not only by the Denver occurrence, but also by detailed study[2] of respiratory illness in a small group of 313 men



from October 1962 to May 1963 when there were 202 episodes involving the upper respiratory tract. The attack rate of illness was related in time to increased concentration of both smoke and sulphur dioxide in the atmosphere of the district in which the men lived.

Other factors often mentioned, include exposure to those who have colds, exposure to extreme changes of temperature, allergy and bacterial infection. However, when low individual resistance due to lack of rest, overwork, fatigue, improper or unbalanced diet, previous illness and emotional stress are included as causes, we enter the realm of somewhat obscure relationships. Much more emphasis can be placed on the role of polluted air.

The symptoms, signs and complications of involvement of the upper respiratory tract, especially the common cold, are the same regardless of the causative factor. Swelling of the lining of the nose, the scratchy dry throat, the discharge from the nose at first watery then thicker, discolored and more tenacious, the eyes tearing, and frequent sneezing are all part of the Number 1 human ailment. Concurrent or residual sinusitis when mucus is trapped there, middle ear involvement due to interference with drainage, laryngitis and bronchitis are complications of the common cold. The primary interference is with a most important function of the nose—the cleansing of foreign matter in the first line of "air defense" to prevent it from entering the breathing tract.

However, the diagnosis and subsequent decision on how to treat the patient so affected rests basically on the relief of symptoms that cause him the misery. The stuffed, runny nose, the clogged ears, and the harsh dry cough—all the symptoms that make common cold sufferers feel miserable and interfere with their sleep—can be alleviated with medications of the oral nasal decongestant/antihistamine combination type. The burning sensation in the throat, soreness of the chest and even chest pain can also be relieved by such medication. Rest in bed if there is fever (but confined to home at least), liberal fluids, uniformly warm surroundings and adequate humidity in the room, are all helpful adjuncts to the medication. Most common cold sufferers recover rapidly and are symptom-free in four to ten days.

Further treatment, altered by the fact that the affliction hangs on for more than the usual duration of the common cold, requires consideration of allergy, which is most frequently the prolonging factor. But air pollution itself may often be the culprit.

(Concluded on following page)

For nature's hazards:
nasal congestion
due to seasonal
allergies and
summer colds



Triaminic® *syrup*

Each teaspoonful (5 ml.) contains:

Phenylpropanolamine hydrochloride	12.5 mg.
Pheniramine maleate	6.25 mg.
Pyrilamine maleate	6.25 mg.

For nasal congestion regardless of cause, you can bring quick, lasting comfort to your little patients with Triaminic Syrup. You may occasionally encounter these *side effects:* drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. *Precautions:* the possibility of drowsiness should be considered by patients engaged in mechanical operations requiring alertness. Use with caution in patients with hypertension, heart disease, diabetes, or thyrotoxicosis.

(Advertisement)



At the Third National Conference on Air Pollution held recently, it was emphasized that this subject had received more attention in the past four years than in all previous history. Spicer,[11] an active participant at this conference, reiterated that it behooves the practicing physician to be aware of trends in respiratory disease and to accept a major role in community action relating to air pollution and respiratory health. By taking a positive stand physicians have been instrumental in the development of anti-pollution legislation. An outstanding example is Los Angeles where major steps have been taken by abolishing coal burning, and even banishing oil burning, seven months a year. Natural gas must be used instead and it must be used by industry when available. Backyard incinerators have been abolished in favor of landfill disposal, and building incineration ended except for a few expensive smokeless furnaces.[10] Concerted action can be taken against particular industrial nuisances. One company that disregarded complaints discovered its error when thousands of its credit cards were returned by irate customers who decided to patronize competing companies.[12]

Summary. Respiratory disease is the most important and most costly effect of air pollution, whether termed smog, smaze, or smust. Air pollution is an economic, esthetic and public health problem that affects practically every American locality and citizen. New sources of air pollution are invisible and odorless, but the harmful gases and liquid droplets are there. Triggered by sunlight, some of these undergo mid-air chemical changes and the results are even more irritating to the upper respiratory tract. The symptoms, signs and complications, especially of the upper respiratory tract, can be readily aborted by modern medication but may be unduly prolonged by polluted air. In steps taken to prevent this, the practicing physician can take a major role.

References 1. Anderson, R. J. Air Pollution, Respiratory Disease and the NTA, W. Virg. M. J., 60:332, 1964. 2. Angel, J. H., Fletcher, C. M., Hill, I. D., and Tinker, C. M. Respiratory Illness in Factory and Office Workers, Brit. J. Dis. Chest, 59:66, 1965. 3. Waste Disposal Problems Grow, Current Municipal Problems, 8:218, 1966. 4. McKee, J. quoted by Hills, G. U.S. War at Home-Fight Against Smog, Chicago Tribune, Sept. 26, 1966. 5. NYC Task Force Revives Concern on Air Pollution, Med. Trib. 7:23 (Sept. 17-18) 1966. 6. Flaxman, N. Pulmonary Emphysema, Med. Trial Tech. Quart. 1960 Annual, p. 221. 7. Heimann, H. Air Pollution and Respiratory Disease, Ann. Allergy 21:396, 1963. 8. Flaxman, N. Pneumonitis and Lung Cancer, Med. Trial Tech. Quart. 1965 Annual, p. 185. 9. Flaxman, N. Pulmonary Tuberculosis, Occupation and Trauma, Med. Trial Tech. Quart. 1959 Annual, p. 237. 10. Hill, G. U.S. War at Home-Fight Against Smog, Chicago Tribune, Sept. 26, 1966. 11. Spicer, W. S., Jr. Relation of Air Pollution to Disease, Arch. Environ. Health, 9:600, 1964. 12. Henderson, C. F. What You Can Do To Combat Air Pollution, Parents' Mag. 41:76, 1966.

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Each timed-release tablet contains:

Phenylpropanolamine hydrochloride	50 mg.
Pheniramine maleate	25 mg.
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Side effects: Occasional drowsiness, blurred vision, cardiac palpitation, flushing, dizziness, nervousness or gastrointestinal upsets.

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a skeletal muscle relaxant shown to have up to a ur span of action,[4-6] and to retain effectiveness n on continued administration,[5-7] but which does not e the central effects of tranquilizing compounds.

scribe PARAFON FORTE for lasting spasmolysis analgesia in sprains, strains, myalgias, low back n, bursitis and other musculoskeletal disorders. r patients will appreciate the restored comfort lasting freedom of movement it usually provides.

Cautions and side effects: Use with caution in patients with known drug sensitivity. If a hypersensitivity reaction or symptoms suggestive of liver dysfunction are observed, the drug should be stopped. Occasionally, drowsiness, dizziness, lightheadedness, malaise, overstimulation or gastrointestinal disturbances may be noted; rarely gastrointestinal bleeding, allergic skin rashes, petechiae, ecchymoses, angioneurotic edema or anaphylactic reactions may have been drug associated. While *Paraflex* (chlorzoxazone) has been suspected as being the cause of hepatic toxicity in approximately eighteen patients, it was not possible to state that the dysfunction was or was not drug induced. ***Dosage:*** Two tablets q.i.d. ***Supplied:*** Scored, light green tablets, imprinted "McNEIL"—bottles of 100.

References: 1. Batterman, R. C., and Grossman, A. J.: Fed. Proc. *14*:316, 1955. 2. Goodman, L. S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 3, New York, The Macmillan Company, 1965, p. 331. 3. Roth, J. L. A., *et al.*: Gastroenterology *44*:146, 1963. 4. Conney, A. H., and Burns, J. J.: J. Pharmacol. Exp. Ther. *128*:340, 1960. 5. Settel, E.: Clin. Med. *6*:1373, 1959. 6. Berman, H. H., *et al.*: Dis. Nerv. Syst. *25*:430, 1964. 7. Darienzo, C.: Ibid., *27*:189, 1966.

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of the
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Outpatient Treatment of Chronic Obstructive Pulmonary Disease (COPD)*

Murrill M. Szucs, Jr., M.D.** and George P. Lord, M.D.***

Recent estimates place the incidence of chronic obstructive pulmonary disease (COPD) at 15 to 20% of the middle aged male population. Less than half of these patients are symptomatic enough to demand a physician. This discussion of therapy deals with this group.

Emphysema (defined as lung destruction or departitioning of alveoli) is probably an irreversible lung lesion. However, most patients with chronic bronchitis do not have "emphysema." For example, in mucoviscidosis (cystic fibrosis) the airways are severely damaged by recurrent infection while the lungs remain normal. As "emphysema" carries such an aura of hopelessness for patient and physician, we reserve this term only for patients with demonstrated lung destruction.

In clinical terms, COPD patients are divided into those who cough and spit and those who wheeze. "Coughers and spitters" usually have chronic bronchitis.‡ An appropriate laboratory work-up might include: 1) hemogram – with assessment of hematocrit and total eosinophil count, 2) a Gram stain and culture of the sputum for *Staphylococcus* and Gram-negative organisms, 3) a Wright stain of the sputum for eosinophils, 4) inspiratory and expiratory chest x-rays for evaluation of lung markings and evidence of localized trapping or bullae and 5) some measure of expiratory airflow rate. Patients with recurrent pulmonary infections may have primary or acquired hypogammaglobulinemia. Serum protein immunoelectrophoresis is usually abnormal. In addition, cystic fibrosis may present as chronic bronchitis in adulthood. Some of these patients have abnormal sweat electrolytes.

Interdiction of cigarettes is essential. One method is to explain the deleterious effects of cigarettes to the patient, then to ask him if he wishes to stop smoking. If he does, ask him to surrender his cigarettes to you for the next week. Should he have a desire to smoke, he is asked to call. Interestingly, patients seldom call and often after a week without smoking they feel better and stop permanently. Smoking may be an integral part of the psychodynamics of the individual. Anxiety, depression and aggitation may result during withdrawal. Tranquillizing agents, psychiatric consultation or referral to "Smoker's Anonymous" may be helpful.

For the "cougher and spitter" the keystone of effective outpatient treatment is proper instruction in the use of bronchodilators and postural drainage. Each patient is seen by the Inhalational Therapy department. He is fitted with an appropriate IPPB or aerosol generator device and instructed in its use. The chest physiotherapist teaches the patient effective coughing, postural drainage, pursed lip breathing, metered-walking (3 steps for inspiration, 5 steps for expiration) and breathing exercises in some cases.

IPPB-bronchodilator and postural drainage therapy is performed before breakfast, on returning from work and at bedtime using 0.5 cc of isoproterenol 1:200 or 0.5 cc of epinephrine 1:100 in 1.5 cc of water. Interchanging medications reduces tolerance. The use of long-term antibiotics is controversial. As Tetracycline-like drugs

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‡Defined by the American Thoracic Society, American Review Respiratory Diseases 85:762, 1962.

are expensive and reduce appetite (perhaps by their effect on nitrogen balance) many patients do better on full doses of Sulfisoxazole (Gantrisin®). Polyvalent flu vaccine is given in the second week of September and in the first week of November (keeping in mind any history of sensitivity to poultry products).

"Wheezers" form a second group. Only 5% of childhood asthmatics go on to adulthood with chronic asthmatic bronchitis. In the adult, acute and chronic bronchial asthma may be very difficult to manage. Eosinophil counts in the blood and sputum are used as guidelines in therapy. A total eosinophil count in excess of 300 per cubic millimeter indicates the likelihood of allergic disease. This suggests steroids are indicated. Two complications of steriod therapy are anticipated in these patients. Peptic ulceration and gastrointestinal bleeding are common. Antacid therapy is given along with the steroid and stools are checked regularly for occult blood. In post-menopausal asthmatic women, "bony demineralization" and spine fractures occur with surprising swiftness. Calcium lactate or sodium flouride may delay this unfortunate occurrence.

Acute respiratory insufficiency, cor pulmonale, and respiratory acidosis are treated in the hospital. Therapy may include intubation or a tracheostomy and ventilation. Tracheostomy helps a patient handle his secretions. We have recently discharged a patient with a tracheostomy which he manages with typical "Yankee ingenuity."

Case Report

A fifty-nine-year-old man was admitted to the MMC in June, 1966 moribund with severe respiratory insufficiency and cardiac failure. He had been followed here since 1961 with a diagnosis of chronic bronchitis and emphysema. During this time he was admitted eight times and had 25 emergency room visits. His average hospitalization was in excess of 30 days. His hospital record comprises three volumes, each over 3 inches thick. The present episode began with a "cold."

Examination in the emergency ward revealed a cyanotic, unresponsive, middle-aged man with a pulse of 110, respirations 40 per minute, blood pressure 160 systolic, 90 diastolic. The neck veins were distended to the angle of the jaw, dullness to percussion and coarse rales were present at both lung bases. The liver was enlarged to 6 cm below the right costal margin. There was 4+ pitting ankle edema present. There was no papilledema, asterixis or splenomegaly.

The hematocrit was 52%, hemoglobin 15 gm%, white blood cell count 19,000 with 70% segmented neutrophils and 18% bands. The urinalysis showed a trace of protein with 3-5 red blood cells per high power field. The chest x-ray revealed diffuse pulmonary fibrosis and widespread disruption of lung markings consistent with destructive lung disease. The blood urea nitrogen was 7 mgm%, serum sodium 143 MEQ/liter, potassium 6.7 MEQ/liter, CO_2 content 41 MEQ/liter, venous pressure 180 mm of saline, Decholin® circulation time 28 seconds. Arterial blood gases showed hypoxemia and uncompensated respiratory acidosis.

An emergency tracheostomy was performed and controlled ventilation was begun. Other treatment included Chlorenphencol 0.5 grams q6h, Digoxin 0.25 mgm od, and Diuril mgm bid.

Following recovery from this acute episode he was taught how to suction secretions from his tracheostomy. At home, he uses a simple venturi water-driven aspirator and suctions himself three times a day. He makes his own saline for catheter irrigation and cleaning. His tracheostomy is plugged and covered with an appropriate high-necked blouse or sweater during the day. Although his sputum culture contains pseudomonas, his x-ray has improved and his exercise tolerance has improved. During the year since his tracheostomy he has not been admitted. Recently, after 7 years of invalidism, he returned to work as a painter.

Over the years these patients accumulate countless volumes of in-patient record and pounds of x-rays. The cost to patient, hospital and physician may be enormous. Effective out-patient therapy can reduce the number of admissions and the improvement in well-being is gratifying.

Acknowledgement

We would like to thank the staff of the Maine Medical Center and other referring physicians for the availability of clinical material for development of the out-patient chest program and the Maine State, Cumberland County, and York County Tuberculosis and Health Associations for their continuing and enthusiastic support.

Uterine Cancer

Death still snatches the lives of some 14,000 women annually who die of uterine cancer in the United States. This is especially tragic as uterine cancer is one of the most curable forms of cancer today. It can now be detected and treated before symptoms appear.

Some progress has been made, however, during the past year. One of the Society's five-year educational achievement goals is the routine use of Pap smears for hospitalized women. A number of hospitals now routinely provide Pap smears for adult women admitted, according to Dr. Ernest W. Stein, President of the American Cancer Society, Maine Division.

"Detection of uterine cancer (in the cervix or neck of the uterus) can be made with the Pap test or smear developed in the 1920's by the late Dr. George N. Papanicolaou.

"This test, one of the great medical discoveries of this century, is based on the study of castoff cells which are shed normally by living tissue. In a checkup, a physician can take a uterine sampling simply, quickly, and painlessly.

"The Society's goal is to have at least 75 per cent of all women over 21 years of age go for their annual Pap test and pelvic checkup."

Radiation Therapy at Maine Medical Center

A Progress Report

ROBERT A. BEAROR, M.D.*

Radiotherapists have been utilizing ionizing radiation in the cure and palliation of malignancies since just a few months after Roentgen's brilliant observations led to the discovery of x-rays in 1895. Although there is a long and sometimes sad history of attempts to use the "new rays" in the cure of almost everything from asthma and blindness to warts, yaws, and herpes zoster, the experiences distilled from these pioneer efforts in radiation therapy did give unequivocal evidence that most cancers decreased in size and some were actually eradicated under appropriate circumstances. The "law" of Bergonie and Tribondeau, first formulated in 1906, epitomizes much that is known about this particular form of energy: "the radiation response is proportional to the rate of growth of the cells and their degree of differentiation, being greatest in those most rapidly growing and most highly undifferentiated cells." This experimentally determined conclusion summarizes quite succinctly most of what is still known today about ionizing radiations. This formula, however, does not provide all of the answers to cancer treatment with radiation. The vital role of tissue oxygenation, the significance of initial tumor size, the rate of delivery of radiation, the time between successive radiation treatments, even the emotional status of the patient, can alter the expected result following tissue irradiation.

The actual dose of radiation delivered to destroy a particular cancer frequently approaches the dose which can destroy the surrounding tissues, and indeed, some normal tissues may suffer grievous damage at a dose well below the tumoricidal level. Structures such as kidneys, small bowel, lens of the eye, and bone marrow can be irreparably damaged by the radiation delivered to them incident to treatment of an adjacent tumor. Under certain circumstances any normal tissue may be severely damaged by therapeutic dosages of radiation.

These omnipresent realities have led to the development of multiportal and rotational techniques, dosage fractionation schemes, and various treatment-time arrangements, all designed to improve the clinical response of the patient to radiation therapy. Continuing investigations by clinicians in the larger radiation therapy centers as well as by a "new breed" of scientists, the radiobiologists, have helped clarify the changes associated with tissue irradiation but treatment schedules are still mainly empirical. Newer concepts are evolving, however, which as yet are not standard procedures, but there is reason to believe that as research progresses in radiobiology, especially, information will be obtained which will prove of benefit to an ever increasing number of patients. Traditional indications for radiation therapy are still recognized as valid. It is still a modality which offers the possibility of cure of a few patients with localized cancer and giving, as well, excellent promise of palliation of symptoms in most cases of inoperable malignancy. Recently there has been a definite change in the philosophy of many radiation therapists and treatment is not so often confined to "hopeless cases" as was heretofore the situation. Employment of supervoltage radiation, such as our 60-Cobalt unit delivers, makes possible higher tumor doses with less untoward skin reaction than is commonly seen following orthovoltage treatments. Well-structured animal experiments utilizing transplantable tumors have revealed that tumor cells exposed to low, non-tumoricidal doses of radiation do lose their ability to reproduce, however, when transplanted. This knowledge has led to administration of pre-operative radiation in small doses (500r) to nearly any patient with cancer in an attempt to decrease the likelihood of having the cancer cells inoculated into the circulation during surgery retain their ability to form distant metastases. This theory has obvious merit, but whether or not pre-operative radiation of all cancers becomes standard practice in the future depends largely upon the results of more definitive clinical trials. Several specific problems which have undergone re-evaluation in our own practice recently are mentioned below, and an attempt is made to indicate the role radiation therapy can play in the management of a few particular diseases.

BREAST CANCER

There is no controversy whatsoever about the place of radiation therapy in the individual with breast cancer who has distant metastases. Radiation to bony metastases, local skin recurrences, large nodes, etc. in the patient with obvious metastatic breast cancer continues to be of inestimable value in palliation of symptoms. The situation is quite different, however, in the woman whose diagnosis has just been established. The place of radiation therapy in the new patient with breast cancer has not been particularly well eludicated.

The vogue in this country for many years has been to do a radical mastectomy for all Stage I and Stage II breast cancers, and to treat palliatively those patients with evidences of more advanced stages of cancer. At present, the trend amongst most radiotherapists is to offer prophylactic radiation therapy to those patients who have had radical mastectomy in whom there were positive axillary nodes. Postoperative radiation is then delivered

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to the homolateral internal mammary gland chain of nodes, the supraclavicular and infraclavicular nodes, and the region of the apex of the involved axilla. The entire chest wall is not irradiated. The dose delivered is planned to be in the region of 4-5000 rads in four to six weeks. The same treatment plan is utilized if the patient has had a medially placed lesion even in the absence of positive axillary nodes because of the known high incidence of internal mammary gland metastases in that situation. This type of postoperative radiation therapy seems to improve the five-year survival by 5-10% in the treated group over those who have had radical mastectomy alone.

There have been recently a few small series of patients who have had clinically operable cancer of the breast, and whom biopsies of the regional lymph nodes showed metastatic disease either at the apex of the axilla or in the internal mammary chain. No surgery was done on these patients, and these patients have been treated exclusively with radiation. The five-year survival in this group has been reported to be as high as 52% with a ten-year survival of 33%. More extensive trials of this nature are being conducted and preliminary reports indicate that dependence on radiation alone for cure of locally advanced breast cancer may be a valid approach to this vexing problem.

Lung

We do not advocate radiation therapy as the primary method of cure of lung cancer, even though we do have a very few patients alive three or four years after radiotherapy of inoperable lung tumors. It appears that palliative radiation rarely prolongs life but can provide great relief from very serious symptoms. Good palliation of symptoms has been obtained in many patients with most favorable results being seen in patients who have superior vena caval obstruction, persistent hemoptysis, atelectasis, chest pain, esophageal narrowing from nodes, or signs of superior sulcus involvement.

Distant metastases, including brain lesions have nearly always responded favorably, but unfortunately, the improvement obtained is usually short-lived and frequently is overshadowed by new symptoms associated with distant metastases.

The early enthusiasm for extensive pre-operative irradiation prior to lobectomy or pneumonectomy for cancer of the lung has waned somewhat, but still appears to be a very worthwhile approach in carefully selected patients.

Bladder

Treatment of very early cancer of the bladder by surgery alone produces very good (85%) five-year survival. It is well recognized that Stage III bladder carcinoma has serious mortality, and the five-year survival of these patients is in the range of 15% when they are treated by surgery alone. Currently, there is evidence to support the use of a combination of pre-operative radiation followed by cystectomy for improvement of the survival figures especially in Stage III and IV bladder cancer. Thus far, although the exact dosage schedule varies from one treatment center to another, it appears that pre-operative radiation to a dose of 3-4000 rads followed in 4-6 weeks by total cystectomy can effect a five-year survival in about 40% of patients who otherwise might have been in a group with an expected survival rate of only 15%. Our own results using this treatment regime have been encouraging in a few cases. In selected patients with Stage II or III bladder cancer, a full course of 6000 rads delivered to the entire tumor-bearing lesion has thus far resulted in disappointingly few "cures", so we favor the combined approach whenever possible.

Ovary

Routine postoperative radiation in all patients with ovarian carcinoma has not been considered of great value. However, in specific situations it may prove efficacious in extending useful life, although it does not offer very much of a possibility of total cure. There is no added benefit in delivering routine postoperative radiation in patients who have had Stage I ovarian carcinoma of whatever cell type. It is our belief that following surgery for Stage II ovarian carcinoma where there is definite remnant disease left behind in the pelvis, a dose of 4500 rads in four to five weeks to the entire pelvis materially improves the chance of long survival. In Stage III and IV ovarian carcinoma, though irradiation of the entire abdomen may not materially influence survival time, the quality of survival is much improved. The time required for a dose of about 3000 rads to the entire abdomen varies, but it is usually in the neighborhood of eight or ten weeks. The expected complications include moderate nausea, vomiting and diarrhea which usually can be controlled fairly well with medications. The WBC drops to 3000 or less, and platelets usually decrease. The kidneys must be shielded and even then the patients are in some danger of permanent renal damage. Despite the multiplicity of these problems, we have seen enough favorable responses to believe that all patients with locally advanced ovarian cancer should be evaluated for the possibility of receiving irradiation to the entire abdomen following their convalescence from surgery.

Head and Neck

About one-quarter of the patients that we see at the Maine Medical Center for radiation therapy have cancer of the head and neck. These patients display a diversity of tumor types, but the staging of the extent of the disease is usually of more significance than is the cell type. Squamous cell carcinoma heads the list of tumor diagnoses, but plasmacytomas, transitional cell tumors, and sarcomas are also encountered. We believe that Stage I cancer of the larynx should be treated primarily with radiation therapy and delivery of 6000 rads to the involved cord produces five-year cures which closely paral-

lel those obtainable from laryngectomy. The treatment of any of the tumors of the head and neck which are associated with nodal metastases has not produced a heartening number of cures. This is true of both primary surgery or radiation alone. The likelihood of prolonging survival or of eradicating head and neck carcinoma is significantly improved if the combination of pre-operative irradiation followed by wide surgical excision is employed. The pre-operative irradiation dose may vary from 2-4000 rads, and this range of dosage does not significantly alter the operative morbidity.

Early cancer of the larynx and other localized head and neck cancers without metastases may still be best treated with high doses of radiation (6000 rads). Certainly metastatic cancer does not provide a field for undue optimism when treated by radiation alone so we favor a combination approach to these patients.

Hodgkins Disease

It is most important that an aggressive, optimistic approach be adopted by the physicians responsible for the treatment of patients with Hodgkins disease. The prognosis for longevity in these patients is intimately related to the staging of the disease, and we utilize the classification formulated by the members of a symposium on clinical aspects of Hodgkins disease sponsored by the American Cancer Society and the National Cancer Institute in November of 1965 (Table 1). Patients with Stage I or IIA disease with only local node involvement without systemic symptoms, are treated quite intensively with radiation and we expect a five-year survival in 75% of these patients. Only 5% of those remaining symptom-free for five years have evidence of recurrence thereafter.

All new patients should undergo an extensive clinical evaluation including routine lymphangiography and possibly inferior venacavography, if they have early clinical staging of their disease when first seen. Lymphangiography has been responsible for the observation that at least 40-50% of patients who would ordinarily be classified Stage I or II on clinical grounds are in actuality more advanced in their staging, and thus require a different approach to their treatment. Following meticulous staging, decisions relative to the choice of treatment modality should be made jointly by the radiotherapist and a physician well qualified in cancer chemotherapy. Present day treatment of choice in Stage I and II disease is supervoltage radiation to doses in the range of 3500 to 4000 rads in four to eight weeks over wide fields designed to completely cover the involved lymph node chains in continuity with each other. There is a current clinical study being conducted to appraise the efficacy of applying the same philosophy to therapy of patients who present with Stage III involvement, but early results are too indecisive as yet for universal recommendation that these Stage III patients be treated as vigorously with radiation as those with more localized involvement. In the later stages it is usual to start patients on a course of chemotherapeutic management with administration of radiation to specific areas of tumor involvement that remain after or appear during chemotherapy. A combination of chemotherapy and radiation applied concomitantly or consecutively can provide excellent palliation as well as substantial increase in longevity of most patients with advanced Hodgkins disease.

Table 1

Classification Of Hodgkin's Disease

Stage I	Disease limited to one anatomical region.
Stage II	1. Disease limited to two contiguous anatomical regions, on the same side of the diaphragm.
	2. Disease in more than two anatomical regions, or in two non-contiguous regions, on the same side of the diaphragm.
Stage III	Disease on both sides of the diaphragm, but limited to involvement of the lymph nodes, spleen and Waldeyer's Ring.
Stage IV	Involvement of the bone marrow, lung parenchyma, pleura, liver, bone, skin, kidneys, gastrointestinal tract or any tissue or organ other than the lymph nodes, spleen or Waldeyer's Ring.

All stages will be subclassified as A or B to indicate the absence or presence, respectively, of systemic symptoms.

Summary

We have attempted to summarize a philosophy of treatment of some cancer patients utilizing radiation therapy, and have given a general outline of the methods of management of patients with a few specific types of cancer.

The Serum CPK Levels in Postoperative Patients Over Forty

HARRY W. BENNERT, JR., M.D.* and ANTHONY BETTS, M.D.**

The enzyme, Creatine Phosphokinase, is increased in the serum under conditions involving muscle necrosis. In 1959, Ebashi[1] reported a rise in serum creatine phosphokinase in patients with progressive muscular dystrophy. Dreyfus[2] in 1960 described a series of patients with established acute myocardial infarction with abnormally high CPK levels. It soon became evident that the CPK was a more specific and sensitive enzyme for the detection of myocardial necrosis than the SGOT, which might be augmented and confused with SGPT released from the liver.

Since cardiac failure involving hepatic congestion is a common occurrence incidental to myocardial infarction, reliance on the SGOT as the sole enzyme determination can be misleading. Dependence on LDH levels is equally hazardous, where slight necrosis of other organs, or hemolysis, can cause it to rise. Apparently the CPK is free from these influences and is unaffected by hemolysis; nevertheless, the CPK level does rise following skeletal muscle necrosis or violent exercise.[3] In view of the potential diagnostic use of CPK, it appeared important to know to what extent the level was affected by minor muscle necrosis, especially intramuscular injections. It also appeared necessary to know the interval in man between the onset of known muscle necrosis and the rise in serum CPK.

In order to examine these factors, 50 randomly selected men and women in the age range commonly associated with myocardial infarction, and undergoing various operations, were studied for CPK levels at intervals before, during and after surgery.

METHOD

Fifty patients, all over age 40, were divided into 2 groups of 27 males and 23 females. All patients were scheduled for a variety of operations, which are listed in Table I, varying from relatively minor short procedures such as an inguinal hernia repair to major surgery involving destruction of considerable amounts of muscle; for example, insertion of an Austin-Moore hip prosthesis. All operations were elective. At least 2 hours before the operation all the patients received an intramuscular injection for premedication. These premedications are listed in Table I.

Twenty-four hours prior to operation 10 c.c. of blood were drawn from each patient's arm and the serum was immediately taken off and estimated for the creatine phosphokinase level. One hour postoperatively, while the patients were still in the recovery room, blood was again drawn for a further estimation of the serum creatine phosphokinase. A third and final sample was taken as near as possible to 24 hours following the operation, and again the creatine phosphokinase was determined. The method for determining the creatine phosphokinase is that described in the Sigma[4] Modification Technical Bulletin 661. It is a colorimetric procedure where ATP together with creatine is converted under the influence of creatine phosphokinase to ADP and phospho-creatine. The phospho-creatine is hydrolized to creatine and inorganic phosphate. The inorganic phosphate is then measured by the Fiske and SubbaRow[5] procedure. The method has been used extensively during the last two years in this laboratory and the results have been consistently reliable. A specific study correlating established diagnoses of myocardial infarction both clinically and at autopsy correlated well with the CPK levels. A normal value for the CPK in our laboratory lies between 0 and 12 units.

RESULTS

Of the 50 patients, only 3 males showed above normal CPK levels preoperatively. One hour postoperatively, 7 males and 1 female had CPK levels above normal. See Table I. The length of operation for these patients varied between 1 hour and 4¾ hours. There was no specific operative procedure which correlated with the rise in CPK. Twenty-four hours postoperatively, a further 9 men and 9 women had abnormally high CPK levels. Again, the operative procedure for these patients lasted between ¼ hour and 6½ hours, and no specific procedure tended to give a higher rise of CPK. It is of interest that of the 50 patients surveyed, 4 had episodes of hypotension during the operation lasting more than 15 minutes, and of these, 3 showed a rise in CPK at the end of 24 hours. Nine patients out of 10 who had a previous history of arteriosclerotic heart disease showed increased CPK levels at 24 hours.

DISCUSSION

It has been reported[6] that the CPK level rises within 6 to 8 hours following acute myocardial infarction, and remains at a peak level for 36 hours. Other studies[7] have indicated that severe athletic exercise causes a transient rise in CPK, which disperses within 24 hours. There have been suggestions that minor procedures involving

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TABLE I

CPK Level in Males

	Age	Incidental Pathology	Premedication	Operation	Length of Operation	Anesthetic	Complications During Operation	CPK Levels Preop.	1 hr. post-op.	24 hrs. post-op.
1.	44	D.M. LVH Chronic bronchiectasis	M. S. Atropine®	Reduction of fractured mandible	2 hrs.	PNF Anect.	0	4	6	4
2.	47	0	Seconal® Demeral® Atropine	Anterior cervical fusion	2½	PNF Anect.	0	4	8	64
3.	48	0	Demeral Phenergan®	Cystoscopy & pyelogram	½	Spinal	0	8	3	4
4.	49	0	Seconal Demeral Atropine	Lumbar laminotomy	1¾	PNF	0	3	24	92
5.	52	Previous MI Angina Anti-coag.	Seconal Demeral Atropine	Exodontia	1	PNF Anect.	0	3	6	0
6.	54	0	Seconal Scope	Cystoscopy & pyelogram	½	PN	0	5	8	3
7.	54	Chronic obst. lung disease	M. S. Scope	Inguinal herniorrhaphy	1¼	PNF	0	0	6	42
8.	54	0	Seconal Demeral Atropine	Resection distal R. ulnar	½	PNF	0	10	10	8
9.	55	Adenoca. R. kidney	Demeral Atropine	R. Nephrectomy	1½	PN Anect.	0	4	10	48
10.	56	0	Seconal Demeral Atropine	Insertion of Mackler tube	¼	PN Anect.	Considerable coughing	0	3	18
11.	57	0	M. S. Atropine Nembutal®	L. hemilaryngectomy	2½ hrs.	PN	0	6	5	3
12.	57	ASCVD-severe D. M. Emphysema	Seconal Demeral Atropine	Saphenous vein by-pass graft	6½	PNF	0	6	8	20
13.	57	Hypertension ASCVD	M. S.	Carotid endarterectomy	2	Local Xylocaine®	0	18	40	58
14.	59	0	Nembutal M. S. Scope	L. inguinal herniorrhaphy	1	Spinal	0	0	3	10
15.	61	Latent diabetic	Demeral Atropine	Moore prosthesis L.	2½	PNF Anect.	0	3	12	58
16.	65	Angina; hypertension; thoracic aortic aneurysm	Seconal Demeral Atropine	L. anterior thoracotomy	1	PNF Anect.	5 min. hypotension	3	3	36
17.	67	Pernicious anemia — hgb. 14.4 gms.	Demeral Atropine	R. inguinal herniorrhaphy	1½	PNF	0	8	3	10
18.	67	Severe ASCVD Hypertension Emphysema	Demeral Atropine	Excision thoracoabdominal aneurysm	3½	NF Anect.	0	0	28	53
19.	68	Angina in past	Elavil® Atropine	L. nephrolithotomy	2	NF Anect.	0	6	23	30

	Age	Incidental Pathology	Premedication	Operation	Length of Operation	Anesthetic	Complications During Operation	CPK Levels Preop.	1 hr. post-op.	24 hrs. post-op.
20.	68	ASCVD Emphysema	Nembutal M.S.	Femeral-popliteal by-pass. Dacron	4¾	Spinal	0	23	18	198
21.	70	0	Seconal Demeral Atropine	Ant. colon resection	2 hrs.	PNF Anect.	0	5	8	39
22.	72	ASCVD	Demeral Atropine	TUR prostate	1	Spinal	30 min. of bradycardia & hypotens.	24	26	23
23.	73	0	Demeral Atropine	R. inguinal herniorrhaphy	1	Spinal	Hypertensive	6	3	3
24.	75	Previous myocard. ischemia ASCVD	Demeral	L. inguinal herniorrhaphy	2½	Spinal	Vomiting during procedure	3	6	40
25.	77	0	Demeral	S.P. cystotomy, meatotomy & bilat. orchiectomy	2	Spinal	0	3	4	11
26.	77	Emphysema	Demeral Atropine	T.U.R. prostate	1	Spinal	0	5	5	8
27.	82	Adenoca. stomach	Demeral Atropine	Exploratory lap. stomach biopsy	1	PNF	0	3	4	32
				CPK Level in Females						
1.	43	0	Nembutal M. S. Scope	D & C and complete abdominal hysterectomy	2 hrs.	PN Anect.	0	6	3	12
2.	44	Epidermal Ca of bladder	Nembutal M. S. Atropine	Cystectomy & ilial loop	5½	PNF Anect.	0	0	10	24
3.	45	0	Demeral Atropine	Incision of common flexor tendon of R. elbow	1	PNF	0	8	6	28
4.	47	0	Demeral Atropine	Abdominal hysterectomy	3	PNF Anect. Curare	0	0	8	8
5.	51	0	Nembutal M. S. Scope	Cystoscopy & excision of urethral caruncle	½	PNF	0	5	5	3
6.	52	0	Nembutal Demeral Phenergan	Excision lipoma of R. flank	½	PN	0	3	5	3
7.	53	0	Seconal Demeral Atropine	Transphenoidal cryo hypophysectomy	5	PNF Anect.	0	3	6	8
8.	54	0	Seconal Demeral Atropine	Arthrotomy R. knee (removal loose bodies)	1½	PNF	0	6	0	3
9.	55	0	Seconal Demeral Atropine	Biopsy L. breast mass	½	PNF	0	5	11	3
10.	55	0	Nembutal Demeral Atropine	Nephro-ureterectomy	1¾	PNF Anect.	Sl. drop B.P. during op.	6	11	32
11.	56	0	M. S. Scope	Excision of R. leg varices	½ hr.	Spinal	0	5	8	3

TABLE I

CPK Level in Males

	Age	Incidental Pathology	Premedication	Operation	Length of Operation	Anesthetic	Complications During Operation	CPK Levels Preop.	1 hr. post-op.	24 hrs. post-op.
12.	56	Ca. rectum	Seconal Demeral Atropine	Lysis of adhesions; gastrostomy; resection of cecum	4½	PNP	Hypotensive 1 hr.	3	3	10
13.	56	Obesity	Seconal Demeral Atropine	Cholecystectomy; cholangiogram	2	PNF Anect.	0	3	3	20
14.	60	D. M. A.S.P.V.D.	Demeral Atropine	Abdominal hysterectomy	5	PNF Anect. Curare	15 min. hypotension	5	11	28
15.	61	0	Nembutal Demeral	Excision basal cell ca. upper lip	1	Local Xylocaine	0	3	3	3
16.	62	0	Nembutal M. S. Scope	Thyroidectomy	1	PNF Anect.	0	6	11	32
17.	62	0	Demeral Atropine	Sigmoidoscopy & repair anal fissure	½	Spinal	0	10	8	10
18.	63	A.S.H.D. C.A.F.	Nembutal M. S. Scope	Umbilical herniorrhaphy	1	PNF Anect.	0	11	20	24
19.	63	0	Seconal Demeral Atropine	Cholecystectomy; appendectomy	2¼	PNF Anect.	0	3	3	36
20.	66	0	Demeral Compaine	Cataract removal	½ hr.	Local Xylo. & epi.	0	0	5	8
21.	78	0	none	Gastrostomy	1	Local Xylocaine	0	3	3	23
22.	79	A.S.H.D. Angina	Demeral Atropine	L. hip nailing & plating	2½	PNF	Rising pulse	6	3	8
23.	84	0	Nembutal Demeral Comp.	Cataract removal	½	Local Xylocaine & epi.	0	8	8	5

muscular trauma, such as intramuscular injection, could cause a false elevation in CPK levels.[3] From our studies, it would seem that this is an unusual event. Only 3 males out of 50 patients had a rise in CPK 6 hours after having received an intramuscular injection. It is of considerable interest that in spite of traumatic operative procedures involving destruction of muscle, 47 out of 50 patients failed to show any change in CPK levels at periods of 2 to 3 hours or more following the operation, and in several instances the operation had lasted more than 3 hours. The cause for the delay of CPK appearing in the serum is not clear, especially as in some of the operative procedures there was massive damage to muscle at the commencement of the operation. Anesthesia apparently has no effect on the CPK level.

From these results it would seem that an estimation of the CPK level in a postoperative patient may be of some value, especially should an acute myocardial infarction be suspected in the early preoperative phase and manifested during operation. It is of further interest that in spite of traumatic procedures with obvious muscle destruction there is virtually no rise in CPK before at least 6 hours elapse. The leaking of this enzyme through the muscle membrane into the serum may be delayed for reasons which are not clear, or the enzyme itself is not detectable in it's initial form if it is immediately present in the serum. It is of incidental interest that in the few cases which have come under investigation in this laboratory, the CPK level does not rise following death until at least 6 hours. This finding may be of some forensic use. It appears that single intramuscular injections have no effect on the CPK level. Finally, the consistent CPK rise in the postoperative period in nearly all patients with a previous history of arteriosclerotic heart

disease strongly suggests a cardiac muscle component in addition to CPK released due to skeletal muscle trauma.

Synopsis Abstract

Fifty patients over the age of 40 undergoing surgery were examined to determine CPK levels at 1 hour and 24 hours after operation. Eight patients showed an abnormal serum CPK at intervals between 2 and 7 hours from the start of their operations. Fifty-two percent of patients showed abnormal CPK levels 24 hours postoperatively. Nine of the 10 patients having previously documented arteriosclerotic heart disease showed high CPK levels at 24 hours after operation.

The length and type of anesthesia had no correlation with the CPK levels. Intramuscular premedication had no effect on the serum CPK.

Index Terms

CPK

Postoperative-patient

References

1. Ebashi, S.; Toyokura, Y.; Momoi, H.; Sugita, H. J. Biochem., 46, 103, 1959.
2. Dreyfus, J. Cl.; Schapera, G.; Resnais, J.; Seebat, L. "La Creatine-Kinase Serique Dans le Diagnostic de L'infarctus Myocardique." Rev. Fr. Et. Clin. et Biol., V, 386, 1960.
3. Hess, J. W.; MacDonald, R. P.; Frederick, R. J.; Jones, R. N.; Neely, J.; Gross, D. "Serum Creatine Phosphokinase (CPK) Activity in Disorders of Heart and Skeletal Muscle." Annals of Internal Medicine 61, 1015-1027, 1964.
4. Sigma Tentative Technical Bulletin #661. Sept., 1965.
5. Fiske, C. H.; SubbaRow, V. J. Biol. Chem. 66, 375, 1925.
6. Duma, R. J.; Siegel, A. L. "Serum Creatine Phosphokinase in Acute Myocardial Infarction." Arch. Intern. Med. 115, 443-451, 1965.
7. Aevi, U.; Richterich, R.; Colombo, J. P.; Rossi, E. Enzymol. Biol. Clin. I, 61, 1961-62.

A Regional Medical Program for Maine

Merle S. Bacastow, M.D.*

Introduction

Buried in the pages close to the Sport's Section of the Saturday, May 6, 1967 *Portland Press Herald,* was an almost insignificant twelve-line item. It was headlined: *Medical Care Group Granted $193,909.* The grant made by the Department of Health, Education and Welfare in Washington designated funds to Medical Care Development, Inc., of Augusta, Maine. Its purpose was "to improve the diagnosis of heart disease, cancer and stroke" under a two-year program. Thus, with little fanfare and no particular flourish, began Maine's Regional Medical Program.

Insufficient facts to describe fully the true nature of the grant were included with the brief news item. Potentially, some unique opportunities exist through it. The creation and development of an application, evolved from many meetings and dedicated efforts by a group of people interested in a Regional Medical Program for Maine. It was a significant step to achieve cooperative agreements. Joint arrangements among divergent groups are always a significant accomplishment. To be sure, some dedication stemmed from the fact that many in the group preferred to have Maine develop its own Regional Medical Program rather than be included as part of a New England-wide agency based outside of Maine.

How the interested people came together, how the application was developed, and how the numerous meetings progressed is a saga. It is important, however, to point out that this achievement was developed with at least one flaw – communications to grassroot participants should have been more extensive. Since the application was developed by individuals on a volunteer or part-time basis, much communication was neglected of necessity. With the appointment of a full-time coordinator, this phase of Maine's program will be thoroughly considered.

In effect, the Regional Medical Program offers to the medical and allied health care professions an opportunity to make available to all citizens the latest methods in diagnosis and treatment of heart disease, cancer and stroke. The program by design shall be accomplished by establishing cooperation on a regional basis with improvement in related programs of research training, continuing education and patient care, irrespective of whether these activities are carried out by medical schools, clinical research institutions or hospitals. The primary objective defined by President Johnson was to seek a means whereby the achievements of research and the gains from new medical knowledge were translated to a uniform delivery of quality patient care.

The legislative authorization was deliberately made broad, permitting flexibility and innovations. It was made adaptable to permit regional programs to fit local needs and resources within existing patterns of medical care for different communities in different parts of the nation. Because of the lack of rigid structure and because of wide flexibility, Public Law 89-239 has been taunted and criticized in some circles. In essence, the Law provides for two types of grants – Planning and

*President, Medical Care Development, Inc., July 1967.



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Dosage: 1 Extentab morning and evening. **Supplied:** Bottles of 100 and 500.

A·H·ROBINS

Preludin® phenmetrazine hydrochloride



For complete details,
please see full
Prescribing Information.

helps keep calories at arm's length

Preludin is indicated only as an anorectic agent in the treatment of obesity. It may be used in simple obesity and in obesity complicated by diabetes, moderate hypertension, or pregnancy. For use in pregnancy, see Warning.

Dosage: One 25 mg. tablet b.i.d. or t.i.d. Or one 75 mg. Endurets® prolonged-action tablet a day, taken by midmorning.
Contraindications: Severe coronary artery disease, hyperthyroidism, severe hypertension, nervous instability, and agitated prepsychotic states. Do not use with other CNS stimulants, including MAO inhibitors.



Warning: Do not use during first trimester of pregnancy unless potential benefits outweigh possible risks. There have been clinical reports of congenital malformation, but causal relationship has not been proved. Animal teratogenic studies have been inconclusive.
Precautions: Use with caution in moderate hypertension and cardiac decompensation. Cases involving abuse of or dependence on phenmetrazine hydrochloride have been reported. In general, these cases were characterized by excessive consumption of the drug for its central stimulant effect, and have resulted in a psychotic illness manifested by restlessness, mood or behavior changes, hallucinations, or delusions. Do not exceed recommended dosage.
Side Effects: Dryness or unpleasant taste in the mouth, urticaria, overstimulation, insomnia, urinary frequency or nocturia, dizziness, nausea, or headache. (B)R46-560-A

Geigy Pharmaceuticals, Division of
Geigy Chemical Corporation, Ardsley, N.Y.

Under license from
Boehringer Ingelheim G.m.b.H.

even in ulcerative colitis...

characterized by:
—diarrhea, cramps, tenesmus
—bloody, mucoid, purulent stools



LOMOTIL® tablets/liquid

Each tablet and each 5 cc. of liquid contains:
diphenoxylate hydrochloride 2.5 mg.
(Warning: May be habit forming)
atropine sulfate 0.025 mg.

controls diarrhea

In six published studies[1-6] detailed results are given on the use of Lomotil in 111 patients with chronic ulcerative colitis. They show that Lomotil gave satisfactory to "excellent" control of diarrhea in more than two-thirds of these patients. As the disorder advances and destroys bowel musculature, the motility-lowering action of Lomotil, understandably, has less effect.

The successful use of Lomotil in a disorder as exceedingly difficult to treat as moderate ulcerative colitis emphasizes again its unsurpassed antidiarrheal effectiveness in these more common conditions:

- **Gastroenteritis**
- **Acute infections**
- **Spastic colon**
- **Drug induced diarrhea**
- **Functional hypermotility**

For correct therapeutic effect
Rx correct therapeutic dosage

Dosage: The recommended initial daily dosages, given in divided doses until diarrhea is controlled, are:

Children: Total Daily Dosage

3-6 mo. . . ½ tsp.*t.i.d. (3 mg.)
6-12 mo. . ½ tsp. q.i.d. (4 mg.)
1-2 yr. . . . ½ tsp. 5 times daily (5 mg.)
2-5 yr. . . . 1 tsp. t.i.d. (6 mg.)
5-8 yr. . . . 1 tsp. q.i.d. (8 mg.)
8-12 yr. . . 1 tsp. 5 times daily (10 mg.)
Adults: 2 tsp. 5 times daily (20 mg.) or 2 tablets q.i.d.

*Based on 4 cc. per teaspoonful.

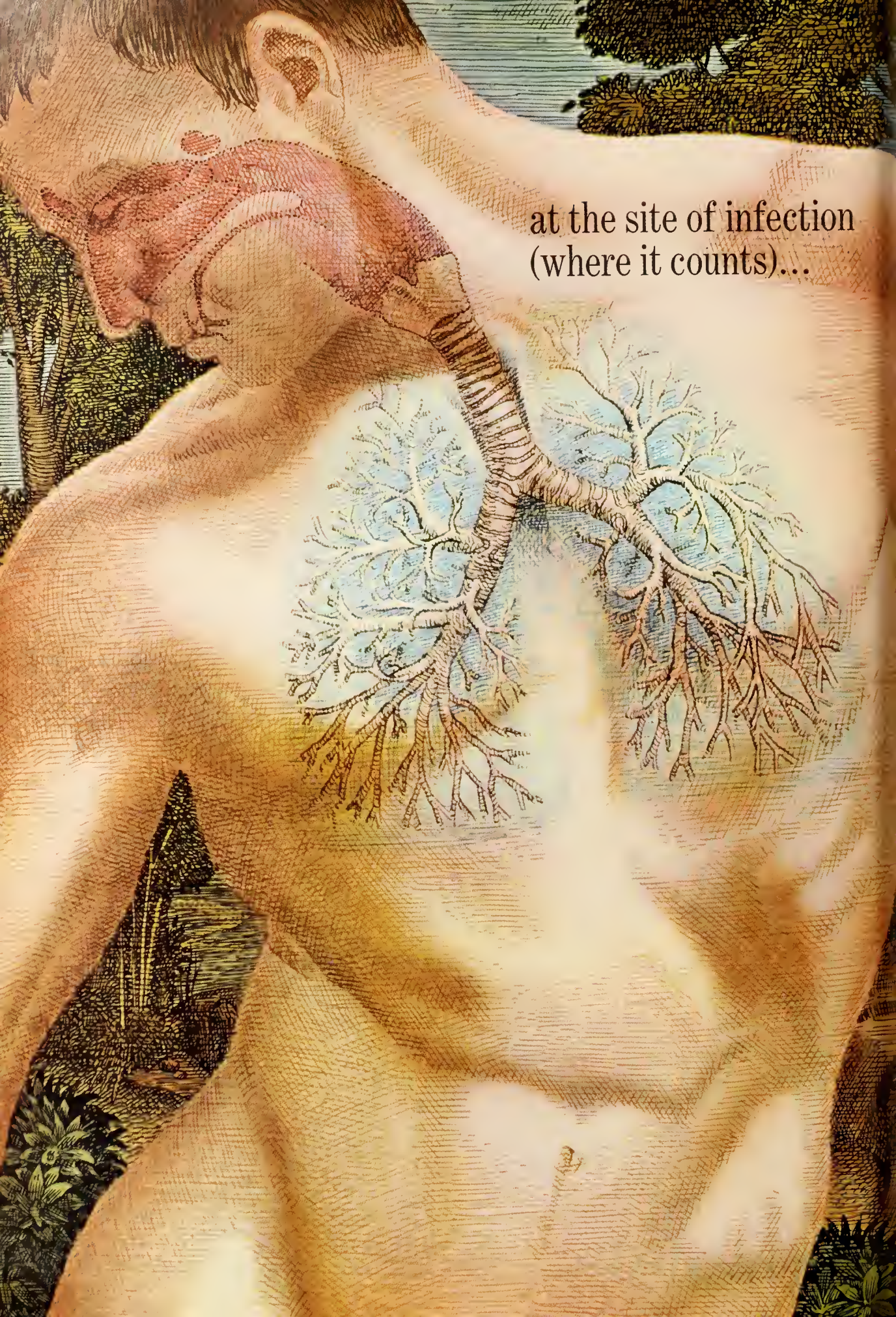
Maintenance dosage may be as low as one-fourth the initial daily dosage.

Precautions: Lomotil is a federally exempt narcotic preparation of very low addictive potential. Recommended dosages should not be exceeded, and medication should be kept out of reach of children. Should accidental overdosage occur signs may include severe respiratory depression; flushing, lethargy or coma, hypotonic reflexes, nystagmus, pinpoint pupils and tachycardia. Lomotil should be used with caution in patients with impaired liver function or those taking addicting drugs or barbiturates.

Side Effects: Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness, insomnia, numbness of the extremities, headache, blurring of vision, swelling of the gums, euphoria, depression and general malaise.

1. Barowsky, H., and Schwartz, S. A.: J.A.M.A. *180:*1058-1061 (June 23) 1962. 2. Cayer, D., and Sohmer, M. F.: N. Carolina Med. J. 22:600-604 (Dec.) 1961. 3. Hock, C. W.: J. Med. Ass. Georgia 50:485-488 (Oct.) 1961. 4. Van Derstappen, G., and Vandenbroucke, G.: Med. Klin. 56:962-964 (June 2) 1961. 5. Merlo, M., and Brown, C. H.: Amer. J. Gastroent. 34:625-630 (Dec.) 1960. 6. Weingarten, B.; Weiss, J., and Simon, M.: Amer. J. Gastroent. 35:628-633 (June) 1961.

SEARLE *Research in the Service of Medicine*


at the site of infection
(where it counts)...

Ilosone® provides more antibacterial activity than any other oral erythromycin

Acid stable, better absorbed... Ilosone produces faster, higher, more prolonged blood levels, even in the presence of food[1-3]

Because it is the most active form of oral erythromycin, Ilosone can help assure consistently greater antibacterial activity at the site of infection. Ilosone produces peak antibacterial blood levels two to four times those of other erythromycin preparations.[1,2] Not only are these levels attained earlier, but they are maintained for much longer periods. Even the presence of food does not seem to affect the activity of Ilosone.[1,3]

In the treatment of patients with bacterial infections susceptible to erythromycin, Ilosone has compiled an excellent therapeutic record. Since it exerts its greatest activity against gram-positive organisms, it is particularly useful in common respiratory and soft-tissue bacterial infections. Ilosone kills—not merely inhibits—streptococci, pneumococci, and more strains of staphylococci than any other macrolide antibiotic. This bactericidal action, coupled with the high antibacterial levels attained, makes Ilosone especially valuable in patients with low host resistance, such as infants, debilitated individuals, and diabetics.

Ilosone has shown no cross-resistance with penicillin and may be effective against organisms that have become resistant to that agent. Despite its high antibacterial activity, Ilosone has demonstrated a low incidence of side reactions. Blood dyscrasias, ototoxicity, and tooth staining have not been observed. Infrequent cases of drug idiosyncrasy, manifested by a cholestatic jaundice, have occurred, but there have been no known definite residual effects.

Now available:
New! Ready-mixed Ilosone Liquid 125! (Contains erythromycin estolate equivalent to 125 mg. erythromycin base per 5-cc. teaspoonful.)

700970

Ilosone®
Erythromycin Estolate

Lilly

(See next page for prescribing information.)

Ilosone®/the most active oral form of erythromycin

Description: Ilosone is the most active form of oral erythromycin that has been developed. Because it is stable in acid, well absorbed, and excreted in lesser amounts in the bile, it provides faster, higher, and longer-lasting levels of antibacterial activity (ABA) in the serum, even when taken with food, than do comparable doses of erythromycin.

Indications: Ilosone is indicated in infections caused by microorganisms sensitive to its action (especially staphylococci, hemolytic streptococci, and pneumococci). The drug is therefore useful in a high proportion of bacterial diseases encountered in clinical practice and particularly in the treatment of bacterial infections of the upper and lower respiratory tract and soft tissues.

In the treatment of acute bacterial pharyngitis and tonsillitis, this antibiotic has promptly eradicated the bacteria (streptococci) and has produced a parallel prompt clinical improvement. There have been no group A beta-hemolytic streptococci resistant to this preparation. In beta-hemolytic streptococcus infections, treatment should be maintained for ten days to prevent the development of rheumatic fever or glomerulonephritis.

Erythromycin estolate has proved to be very effective in pneumococcus pneumonia and in acute bronchitis with pneumococci on culture. Bronchopneumonia and otitis media in children have responded well to its use.

The antibiotic has been used very successfully in staphylococcus infections. Good therapeutic results have been obtained in soft-tissue infections, abscesses, cellulitis, carbuncles, wound infections, and furunculosis.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents. As is the case with any treatment regimen used in these severe conditions, surgical procedures should be performed when indicated, and large dosages of the antimicrobial agents should be employed. In this fashion, Ilosone has been effective in staphylococcus pneumonia, osteomyelitis, septicemia, empyema, and meningitis.

Multiple 500-mg. doses of the drug have also been useful in gonorrhea and syphilis. Since penicillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with preexisting liver disease or dysfunction.

Adverse Reactions: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have developed in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly, usually within forty-eight hours, if the drug is readministered to sensitive patients. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a second time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small compared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extrahepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeared to be definitely related to use of the drug, laboratory findings were characterized by increased direct-reacting bilirubin, elevated alkaline phosphatase levels, negative or weakly positive cephalin flocculation and thymol turbidity tests, elevated serum glutamic oxalacetic transaminase levels, peripheral eosinophilia, and normal cholecystograms.

Individual idiosyncrasy seems evident since jaundice has not been reported in other patients taking prolonged courses of the medication. Patients with chronic infection have been given 1 to to 2 Gm. of the drug daily for periods of two to six months, and patients with rheumatic fever have taken prophylactic doses of 0.5 Gm. daily for two years without difficulty. In one group of 144 patients who received the drug daily for two years, no jaundice was noted. It was of interest that members of six of these patients' families, who were not taking the drug, had episodes of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels were determined in a group of fifty-four adults and children who took 250 mg. of Ilosone daily for an average of sixteen months as rheumatic fever prophylaxis. The results were compared with those of a similar group of forty-four patients who received penicillin. There were no cases of jaundice in either group. Elevation of SGPT and serum alkaline phosphatase levels during the course of treatment was observed in one patient treated with Ilosone and in two patients treated with penicillin. Seven other patients in the group receiving Ilosone and four others in the penicillin group showed elevations in one of the tests at some time during administration of the drugs.

Very satisfactory therapeutic results, without toxicity, were reported in 102 pediatric patients who received short-term (ten-day) courses of Ilosone in the treatment of streptococcus infections. Results of liver function tests in these patients were comparable to those in a similar control group who had received penicillin.

Gastro-intestinal disturbances not associated with hepatic effects are observed in a small proportion of individuals as a result of a local stimulating effect of the medication on the alimentary tract; however, the normal intestinal gram-negative bacterial flora is not appreciably altered by erythromycin drugs.

Although allergic manifestations are uncommon with the use of erythromycin, there have been occasional reports of urticaria, skin eruptions, and, on rare occasions, anaphylaxis.

Administration and Dosage: Ilosone is administered orally.

Ilosone Pulvules®, Ilosone Liquid 125, Ilosone, 125, for Oral Suspension, Ilosone Drops, Ilosone Chewable Tablets.

For infants and for children under twenty-five pounds of body weight, the usual dosage is 5 mg. per pound every six hours; for children twenty-five to fifty pounds, 125 mg. every six hours. (Tablets Ilosone Chewable should be chewed or crushed and swallowed with water.)

For adults and for children over fifty pounds, the usual dosage of Ilosone is 250 mg. every six hours.

For severe infections, these dosages may be doubled.

When larger doses are indicated, parenteral erythromycin therapy should be considered.

In the treatment of syphilis, the recommended total dosage is 20 to 30 Gm. given in divided doses for a period of ten to fifteen days. Close follow-up of the patient is necessary since erythromycin drugs have not had adequate evaluation in all stages of syphilis. Examinations of spinal fluid are recommended as part of the follow-up therapy.

For gonorrhea, 500 mg. four times a day for four days are recommended. In the treatment of gonorrhea, patients with a suspected lesion of syphilis should have a dark-field examination before receiving antibiotics, and monthly serologic tests should be made for a period of three months.

How Supplied: Pulvules Ilosone, Capsules, N.F., 125 and 250 mg (equivalent to base), in bottles of 24 and 100.

Ilosone Liquid 125, Oral Suspension, U.S.P., 125 mg. (equivalent to base) per 5-cc. teaspoonful, in 60-cc. and pint-size packages

Ilosone, 125, for Oral Suspension, N.F., 125 mg. (equivalent to base) per 5-cc. teaspoonful, in 60 and 150-cc.-size packages

Ilosone Drops, 5 mg. (equivalent to base) per drop, in 10-cc.-size packages, with dropper calibrated at 25 and 50 mg.

Tablets Ilosone Chewable, N.F., 125 mg. (equivalent to base) in bottles of 50. [032767

References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:69, 1964
2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:398, 1962
3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198, 1960.

Additional information available to physicians upon request.
Eli Lilly and Company, Indianapolis, Indiana 46206.

Lilly

70097

Operational. The present grant of $193,909 is for planning development in Maine.

A successful program for Maine will require efforts on three fronts. First, it is necessary that all Maine's physicians and citizens have some knowledge of the law. Second, it is necessary to know how Maine's Regional Medical Program reached the point it is today. Third, it is important to outline briefly proposed next steps.

Summary of PL 89-239

PL 89-239 was enacted by the Congress in October 1965. It is today commonly spoken of as the Regional Medical Program Law. In the past, it has been variously labeled as The Heart Disease, Cancer and Stroke Law, The Debakey Law, and CASH.

The purposes of the Law are:

1. To encourage and assist in the establishment of regional arrangements among medical schools, research institutions, hospitals for research and training and for related demonstrations.
2. To afford an opportunity to make available to patients the latest in diagnosis and treatment of these diseases.
3. To improve the health manpower facilities in cooperation with practicing physicians, medical center officials, hospital administrators and representatives from voluntary agencies. This improvement is to be accomplished without interfering with the patterns of professional practice, the methods of financing patient care and the administration of hospitals.

When enacted, the federal budget authorized the expenditure of $340 million dollars over a three-year period: $50 million dollars for the fiscal year ending June 30, 1966, $90 million dollars for the year ending June 30, 1967, and $200 million for the year ending June 30, 1968.

These budgeted grants were designed to assist health care institutions and agencies provide for planning, feasibility studies, operational (pilot) projects including necessary remodeling and built-in equipment and lastly to assist with patient demonstration activities but only when referred by physicians in practice.

For simplicity grants may be identified in broad terms as: Planning and Operational Grants. Both categories of grants are made by the Surgeon General with the guidance of the National Advisory Committee. Planning Grants will be made to appropriate institutions and agencies but only under stipulations that the funds will be used as prescribed in the Act, that the applicant gives assurance of fiscal control and fund accounting, that the applicant will make appropriate reports and that the applicant will operate with a designated local advisory group to include practicing physicians, medical center officials, hospital administrators, medical society representatives, voluntary health agencies and citizens.

Operational grants follow similar stipulated guidelines in expenditure of funds, fiscal control and maintenance of required records and reports. It adds two points: One relates to an administrative regulation regarding laborers; the other to the need for a built-in system of evaluating work done. There must be evidence of the circumstances in existence prior to the project and how the circumstances are modified by achievement of the project's objectives.

The Development of Maine's Regional Medical Program

After passage of the Regional Medical Program Law in October 1965, a group interested in the implications of the legislation for Maine met at the State House on December 1, 1965. Those in attendance at that meeting were: Daniel F. Hanley, M.D., Executive Director of the Maine Medical Association; Roswell O. Bates, D.O., Executive Director of Maine Osteopathic Association; Milan A. Chapin, M.D., practicing internist, Lewiston; Harold N. Willard, M.D., Director of Rehabilitation, Thayer Hospital, Waterville; Dean H. Fisher, M.D., Maine Commissioner of Health and Welfare; Richard C Wadsworth, M.D., Pathologist, Eastern Maine General Hospital, Bangor; Brinton T. Darlington, M.D., practicing internist, Augusta; Ernest W. Stein, M.D., practicing physician, Pittsfield; Norman O. Gauvereau, M.D., practicing physician, Lewiston; John Truslow, M.D., Consultant for a Feasibility Study for a Medical School for Maine; Mr. Alan Bridges, Executive Director of Maine's Health Facilities Planning Council, Augusta; George J. Robertson, M.D., Medical Director, Bingham Associates Fund, Boston; Mr. George T. Nilson, Field Director, Bingham Associates Fund, Augusta; Merle S. Bacastow, M.D., Director of Medical Education, Maine Medical Center, Portland.

After several meetings, it was decided conclusively that Maine would attempt to develop its own Regional Medical Program. While a New England program would likely include Maine, it might not represent Maine's particular interests which may have been overshadowed in the larger effort.

Subsequently, ten major meetings of the Ad Hoc Committee were held from January through June 1966. The discussions at these meetings were long and sometimes tedious. The principle developments included contributions by Richard B. Stephenson, M.D., former practicing physician in Maine and presently Research Grants Officer, National Institutes of Health. He assisted, encouraged and supported the group from Maine to secure information and guidance on the Regional Medical Program.

On May 18, 1966, Medical Care Development, Incorporated officially became a corporation under the laws of Maine. The corporation became the applicant agency and at an organizational meeting on June 30, 1966, the following officers were elected: Merle S. Bacastow, M.D., President; Richard C. Wadsworth, M.D., Vice President; Roswell O. Bates, D.O., Treasurer; and Mr. George T. Nilson, Secretary. The elected officers were empowered

to act as a Board of Directors to develop an application for Maine's Regional Medical Program and to take measures necessary to have the application approved by the Regional Medical Program's office in Washington.

After several meetings within the State and two in Washington, the acting Board of Directors completed the application for Maine's program on schedule for the December 10, 1966 deadline. During the period of December 15, 1966 and January 15, 1967, the drafted application was to have been returned from Washington with suggested revisions and a corrected copy to be resubmitted for the January 15 review. When no official word was received from the Regional Medical Programs office in Washington, it was learned that Maine's application would not be returned. It had passed the staff review and received the first review committee's endorsement. It was on its way to final review by the National Advisory Committee.

At a meeting on April 4, 1967, in Washington, the officers of Medical Care Development, Inc. met with representatives of the staff of the Regional Medical Programs. At that meeting it was learned Maine's program would be approved with certain conditions, and further that conditional approval was the rule rather than the exception.

On May 6, 1967, Maine's Regional Medical Program was announced officially. It was approved and funded with a beginning date for funding as of May 1, 1967.

Possible Next Steps

With the appointment on June 6, 1967 of Manu Chatterjee, M.D. as the Program Coordinator for Maine's program, a necessary first step was taken. No doubt Dr. Chatterjee may choose to modify the conditional planning measures suggested by the applicant agency. His projected schedule, however, will include the fundamental steps of planning in which he will seek basic data. These data will need to be scientifically collected and analyzed. The data may include an estimate of Maine's health care resources in the following categories: Health care personnel (physicians – both allopathic and osteopathic – dentists, nurses, physical therapists, occupational therapists, technologists and others), hospital facilities and services, ambulance services, current hospital planning, continuing professional and public education and research efforts.

The data will then require collation and interpretation in terms of patient needs, morbidity, and mortality for heart disease, cancer and stroke.

The final process will assist Maine's program define its needs, determine its strengths and ascertain the most desirable approaches.

Both planning and operational projects are permitted to be developed concurrently. Planning need not begin and continue to completion before instituting pilot studies consistent with future planning. To isolate planning without developing a limited number of pilot projects suggests planning isolated from reality. It is recognized that simultaneous development of planning and operational projects may subsequently lead to mistakes – common to situations when learning is by experience. The approach, however, is logical to acquire necessary experience in a field where few have first-hand knowledge.

During the developmental phase of Maine's program, considerable effort will be directed toward establishing lines of communication. Cooperation will be absolutely essential among institutions, organizations and individuals. This cooperation will require both improved communication as well as tolerance among groups where previously tolerance has not always existed.

A system of on-going education for all elements for the health profession's team has been a primary and important objective of Maine's Regional Medical Program. President Johnson has indicated that efforts to translate the achievements of medical research to patient care through education must be attained. Several methods of continuing education will involve different groups involved in health care.

Dr. Charles L. Hudson, president of the American Medical Association, in an address to the Conference on Regional Medical Programs on January 15, 1967, pointed out that the American Medical Association assisted in the revision of the original Heart Disease, Cancer and Stroke Program. Revision became the current law. Dr. Hudson reported that he had recommended the program to the constituents of the American Medical Association in counties and states and that they have responded not only as members of local advisory groups, but also by leading in the application for approval of programs. He pointed out that a cooperative effort on the part of all segments of the profession was essential to the success of the program. He pleaded for open, free, mutually respectful and multi-directional communication within the program.

Representatives of the community hospitals and other community agencies will be called upon throughout the State to participate and assist in the planning activities with other groups in this cooperative effort.

Community hospitals will form a focus of interest as the frequent site of therapy during the acute phase of illness. Attention will be given to the problem of continuity of care and communication when the patient transfers from a community hospital to another facility or home.

Some of the following programs have been suggested: Television and radio programs for physicians, nurses, and other health care personnel; creation of central reference centers where a physician may call for assistance and be given references to articles and current journals; improved hospital libraries; expansion of programs which interchange interns and residents between hospitals like New England Center Hospital and Maine hospitals; and use of films and teaching machines with courses of programmed instruction related to heart disease, cancer and stroke.

An expanded population, extensive growth of scientific knowledge and technology and an increased purchasing power among other factors, have imposed unusual demands for all categories of health care personnel. To meet these deficiencies, efforts will be made to attract more young people to careers in medicine, nursing, physical therapy, public health, occupational therapy, social service, etc.

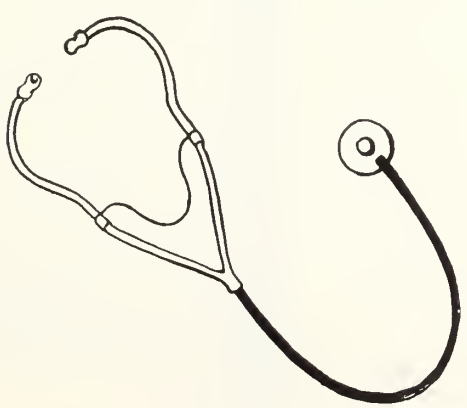
Increased availability and accessibility of high quality medical care is a basic goal of the program. Specialty skills may not be available at all community hospitals. Cooperative arrangements among groups of hospitals and other health agencies with the sharing of resources and skills by preserving existing patient-physician relationships might well accomplish this goal. Easy communication with medical centers, skills and resources for patient benefit should be built into community hospital planning.

It is proposed that each community hospital and other health care agencies form a committee whose objective is to become knowledgeable in the intent of the Regional Medical Program and assist in the development of a regional plan. Interested parties will be invited to participate in intra-regional meetings with other community representatives forming a large representation of community physicians. The planning staff of Medical Care Development, Inc. would bring programs for discussion and receive programs suggested by this group. The community hospital is chosen as a source for practicing physicians because it is a practicing unit more than any other medical organization. Other agencies interested in medical care and education will be urged to become involved in this program with the community hospital.

Further, through cooperative efforts on the part of the official and voluntary agencies already active in these categorical disease areas, health education and information programs may be developed for the public. These programs might include efforts to teach the danger signals of cancer, stress periodic complete physical examinations which emphasize studies for cancer and heart disease, etc. Efforts will be made to achieve better community health by assisting in the establishment of such features as model intensive care, coronary care and rehabilitation units for smaller community hospitals, the expansion of ambulance service and training and the development of homemakers service, home health aid services and home care services. Hopefully, this type of program might also assist in school health programs by creating demonstration projects in communities where indicated.

Federal legislation for health care (including the Medicare, Regional Medical Programs, Comprehensive Health Planning) may seem to be less than ideal, but the Federal Government is in medicine to stay. Passage of the Medicare Law itself marked a point from which there is no return. To oppose Regional Medical Programs now or in the future (as the Medicare law was opposed in the past) may place physicians in a position of wanting to deny "the best" medical care to "poor people." Needless to say, this is a difficult position to defend. Organized medicine's opposition to Medicare in toto has placed physicians in a bad light, ironic though it may seem for a profession that has the greatest traditions of assuming responsibility for the indigent, save any other profession than the ministry.

The opportunities afforded by features of these programs may be one of the last chances physicians have to solve their own problems. To be sure, these problems have not been entirely of the physicians' making, neither are physicians without responsibility. As far as Maine's Regional Medical Program is concerned, either we do it ourselves, or another group may do it for us. Creative federalism, to use the "in" phrase (cooperation between federal government and voluntary agencies in health care enterprises) may be a transient phase. Either we work with the federal government or there may be a different order of things in which we have less to say about what is done in health care. This would not be in the best interest of the nation nor its health.



DEAN H. FISHER, M.D.
COMMISSIONER

State Of Maine
Department of Health and Welfare

The Health Consequences of Smoking

STANLEY C. BECKERMAN, M.D.*

In January 1964, an Advisory Committee, appointed by the Surgeon General of the Public Health Service, issued its report on the relationship between smoking and health.** The conclusion reached by that committee was that "cigarette smoking is a health hazard of sufficient importance in the United States to warrant appropriate remedial action."

In the 12 years which preceded that report, there were some 3,000 research articles related to cigarette smoking, while, in only 3 years following the report, more than 2,000 additional studies have already been documented.

In addition to epidemiological studies, the investigations carried on since 1964 have included a vast amount of experimental, clinical, pathological, and behavioral research, all of which has significantly contributed to our knowledge of the precise ways in which smoking affects the body, as well as to other related areas of information.

This research has been reviewed and, according to the Public Health Service, no evidence has been revealed which brings into question the conclusions of the 1964 report. On the contrary, the reports published since 1964 have strengthened these conclusions, and have extended, in several respects, our knowledge of the health consequences of smoking. These health consequences can be summarized as follows:

1. Cigarette smokers have substantially higher rates of death and disability than do non-smokers. This means that cigarette smokers tend to die at an earlier age and experience more days of illness than comparable non-smokers.

2. A substantial portion of earlier deaths would not have occurred if those affected had never smoked.

3. If it were not for cigarette smoking, practically none of the earlier deaths from lung cancer would have occurred, nor a substantial portion of earlier deaths from chronic bronchopulmonary diseases as well as from cardiovascular diseases. Excess disability from chronic bronchopulmonary and cardiovascular diseases would also have been less.

4. Cessation or appreciable reduction of cigarette smoking could delay or avert a substantial portion of all these deaths and significantly diminish the excess disabilities from chronic bronchopulmonary and cardiovascular diseases.

The economic consequences of cigarette smoking are also quite clear. Seventy-seven million days of work are lost each year in the United States for reasons which are attributable to cigarette smoking. This represents almost 20% excess work days lost among cigarette smokers. Translated, this means that non-smokers are significantly better risks to employers. They lose significantly less time from work, are therefore capable of increased work output, and are paid for productivity rather than sick-leave.

Recently published, and worthwhile reading, has been a review of this subject by the Public Health Service (Publication No. 1696) and much of the above information appears in that report. Regaining these seventy-seven million work days lost each year, and that portion of the gross national product which it represents, might well be worth the loss of the tobacco industry to our economy.

The health consequences of smoking are being clarified and confirmed with each passing of time. The health consequences of apathy are equally clear. The role of the physician as health educator is unique and, as such, he can, in this instance, prevent untold suffering and misery, save innumerable lives, and eradicate the health consequences of smoking. If he will only talk up . . . and be heard.

*Director, Division of Cancer Control.

**"Smoking and Health. Report of the Advisory Committee to the Surgeon General of the U.S. Public Health Service."



one step ahead

Times change and classic lobar pneumonia is rare. Your next pneumonia patient may have an atypical clinical picture and perhaps a pathogen in his sputum such as *H. influenzae* or *Mycoplasma pneumoniae* (Eaton Agent), which is believed to be responsible for one out of every five cases of pneumonia. That's why it makes sense to keep one step ahead—and prescribe the *true* broad-spectrum antimicrobial activity of DECLOMYCIN.

With DECLOMYCIN, you get effective action against *both H. influenzae* and *Mycoplasma pneumoniae*, plus prolonged high levels of antibiotic activity in the blood and the lung tissue. You're one step ahead with...

DECLOMYCIN®
DEMETHYLCHLORTETRACYCLINE

Lederle

Prescribing information on next page.

For a wide range of everyday infections—respiratory, urinary tract and others—in the young and aged—the acutely or chronically ill.

For common and unusual pneumonias

DECLOMYCIN Demethylchlortetracycline should be equally or more effective therapeutically than other tetracyclines when the offending organisms are tetracycline-sensitive.

Contraindication: History of hypersensitivity to demethylchlortetracycline.

Warning—In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated, and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions—Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects—Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes. A rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose related. Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth — dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs discontinue medication and institute appropriate therapy.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

Capsules: 150 mg; **Tablets:** film coated, 300 mg, 150 mg, and 75 mg of demethylchlortetracycline HCl.

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LEDERLE LABORATORIES, A Division of
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Lederle

Maine Heart Association Notes

116 State Street, Augusta, Maine

Reappraisal of Digitalis
Part X. Treatment of Digitalis Toxicity

At present, no specific antidote for digitalis counteracts all of the physiologic effects of digitalis without introducing effects of its own. . . .

The safest and most consistent method of treatment is withdrawal of digitalis as soon as toxicity is detected. . . .

Digitalis should be completely withdrawn rather than reduced in dosage. . . . adequate tissue saturation will remain until after the last toxic sign disappears. At that time, digitalis may be administered in a dose lower than that previously used.

More urgent treatment is necessary when toxicity results with arrhythmias that interfere with function of the heart. These fall into two categories: tachycardia and slow heart rate due to sinus bradycardia or heart block. . . . The treatment of choice for heart block or marked sinus bradycardia . . . is the temporary installation of an endocardial catheter pacemaker . . .

The treatment of toxic arrhythmias manifested by a rapid heart rate is much less satisfactory. . . . The most specific treatment is the administration of potassium either intravenously or orally. . . .

Another agent . . . is diphenylhydantoin. . . . Clinical studies on its effectiveness in digitalis intoxication are few, but some successes are reported. Its major hazard is pacemaker depression.

. . . Although cases of prompt and permanent remission of digitalis-induced tachycardia without side effect from synchronized precordial shock have been reported, it has also been shown that shock is less likely to revert tachycardia due to digitalis, and that tachycardia is more likely to recur rapidly. The incident of shock toxicity, is also greatly increased. It is now generaliy considered that synchronized precordial shock is contraindicated in digitalis toxicity.

Quinidine or procainamide will be effective in most ventricular tachycardias, but in the presence of digitalis intoxication, there is a higher incidence of ventricular fibrillation. . . . Nonetheless . . . they remain the drugs of choice for life-threatening tachycardia due to digitalis in which . . . potassium is considered to be too slow and unpredictable.

Propranolol . . . , is now undergoing intensive study in the treatment of digitalis intoxication. Preliminary reports suggest that this agent is very effective in the control or arrhythmias due to digitalis. . . . it seems to be possible that this drug may be the best treatment available for tachycardias due to digitalis.

Submitted by Jacob B. Dana, Maine Heart Association.
Reference — Lyon, A. F. et al, American Heart Journal, Volume 73, pages 835-837, 1967.

AMERICAN CANCER SOCIETY - MAINE DIVISION, INC.

Brunswick, Maine

The "Image" of Cancer*

STANLEY WARREN**

To what extent are people aware of the first signs of cancer? How deep in the public consciousness is the penetration of the heavy emphasis placed on Cancer's Seven Warning Signals by the American Cancer Society? How many people, for example, know all the signs? Or two or three? Or even one?

The answers to these questions, according to an ACS nation-wide survey last year, lies somewhere between an "overt" or "latent" knowledge of the signs. By "overt" is meant direct knowledge against "latent" awareness, as revealed by a check-list type of question.

The ACS probe revealed that while spontaneous recall of the danger alarms was not high, latent knowledge of cancer's tell-tale signs was much more widespread. In either case, three-quarters said that when they had a symptom they thought might be cancer, they went promptly to a doctor.

Just what are cancer's warning signals? They are: 1) Unusual bleeding or discharge; 2) A lump or thickening in the breast or elsewhere; 3) A sore that does not heal; 4) Change in bowel or bladder habits; 5) Hoarseness or cough; 6) Indigestion or difficulty in swallowing; 7) Change in a wart or mole.

Why is it of the utmost urgency to see a doctor if a signal lasts longer than two weeks?

Cancer begins typically as a localized disease. At the start a single cell — or perhaps two or three — becomes cancerous and reproduces itself by dividing into two cells. The process is repeated over and over. A great many cancers originate in one spot but, if left unchecked, tend to spread via the lymph glands or blood vessels to other parts of the body. It is to prevent this spreading that prompt action must be taken once a warning sign is discovered. And prompt action means an immediate visit to a doctor, for the longer the cancer is allowed freedom to spread the more dangerous the case becomes.

Every year the American Cancer Society distributes some 50,000,000 copies of cancer's warning signals. How well does the public know these warnings? Almost 70% of those queried mentioned at least one correct cancer symptom. This is a welcome total; but, looking at the other side of the coin, it is disturbing to note that 31% — or roughly 60 million Americans still do not know a single cancer symptom. And one-third of all surveyed mentioned a cancer symptom that is incorrect.

Here's a chart of how the respondents fared in the direct query about cancer symptoms.

	Total	*Current Goers*	*Past Goers*	*Non-Goers*
Mentioned A Correct Symptom of Cancer	69%	83%	75%	56%
Lump	51	67	57	42
Bleeding	36	53	42	27
Sore doesn't heel	32	37	33	29
Hoarseness, cough	20	29	18	17
Change in wart	11	15	12	10
Change in bowel	9	14	9	7
Indigestion	2	4	4	1
Difficulty in swallowing	1	2	2	1

	Total	*Current Goers*	*Past Goers*	*Non-Goers*
Mentioned An Incorrect Symptom of Cancer	33%	39%	36%	29%
Pain	12	15	12	11
Loss of weight	6	7	7	6
Tiredness	6	7	6	5
Nausea	2	3	2	2
Short of breath	2	3	1	2
Loss of appetite	2	2	2	2
Headaches	2	1	1	2
Bruise	1	2	1	1
Other	8	8	9	8

	Total	*Current Goers*	*Past Goers*	*Non-Goers*
Did Not Mention Any Symptom of Cancer	26%	13%	21%	23%

By contrast, answers to the "check-list question" revealed existence of considerable amount of "latent," or beneath the surface knowledge of the signals. These findings suggest that the public is more knowledgeable about cancer's first signs than previously suspected; they indicate that while people may not walk around with the warning signals at their finger-tips, they recognize a sign once it appears. This is indeed encouraging.

In many cases, cancers can be cured when it is possible to remove or destroy all of the cancerous cells existing in a patient's body. This is accomplished either by surgery or radiation. Some forms of cancer can be treated by drugs. But once the cancer has arrived at an advanced stage — i.e., spread throughout a person's body — then cures are virtually impossible. Early diagnosis, followed by speed of treatment, is the proper course for an individual to take to fight off the dread disease.

More women (82%) than men (58%), the ACS survey showed, were able to mention at least one symptom of cancer. Interesting is that the man-woman relationship for those mentioning an incorrect cancer signal was almost equal, 33% of the females to 32% of the males queried. And women in the 30-40 year age group, the probe further revealed, were the most knowledgeable, some 73% of this category correctly identifying at least one correct symptom of cancer.

Based on educational lines, nearly 82% of the college-trained respondents named a cancer symptom, as against 69% for high school graduates and 48% for grade school members. The high income group just did nose out the medium bracketed by 76% to 73%.

The ACS survey consistently brought out that women were more aware of cancer and its signals and the need for taking regular cancer checkups. And of these women, it was invariably the college educated and the upper middle income bracket groups that led the field.

In the area, for example, of the famous Pap test, 67% of the women queried said they have had such a test, proof that this life-saving technique is gaining wide acceptance. For, in 1961, only 30% of women reported having had the test. In 1963, the figure had risen to 48%.

The effectiveness of the Pap test can be seen from the decline of the death rate from uterine cancer over the past 25 years. In 1943, the fatality rate from uterine cancer was 24.2 per 100,000 females. By 1948, this had fallen to 21.4. And in 1963 the figure sank to 12.6.

As we have seen previously, many reasons are advanced by the public for not going for tests. These have ranged from the "I'm healthy" to the hidden fear expressed in the answer one person gave: "If I had cancer — the outcome of it — I'd be upset." Another found it troublesome: "There's too much time involved in getting appointments, finding out where to go, and getting there," was the answer.

*Part two of a six-part series from American Cancer Society News Service Release.

**News Editor, American Cancer Society, Inc.

Necrologies

John R. Sullivan, M.D.

1911-1967

John R. Sullivan, M.D., 56, of Brewer, Maine died on July 12, 1967. He was born in McAdam, New Brunswick, July 5, 1911, the son of James and Stella Sullivan.

Dr. Sullivan graduated from St. John's Prep School in 1930, Holy Cross College in 1934 and received his medical degree from Dalhousie University Faculty of Medicine in 1943. He was a Captain in the Royal Canadian Army during World War II and formerly practiced medicine in Centerville, New Brunswick and Millinocket, Maine before locating in Brewer in 1954.

He was a member of the Penobscot County Medical Association, the Maine Medical Association and the American Medical Association. Dr. Sullivan had served as a Penobscot County medical examiner, a Federal Aviation Agency medical examiner, Brewer city health officer, physician to the city, county and state police officers, the Eastern Division Standard Packaging Corporation and the Bangor and Aroostook Railroad. He was a staff member of St. Joseph Hospital and the Eastern Maine General Hospital and a fourth degree member of the St. Martin of Tours Council, Knights of Columbus.

Surviving are his widow, Mrs. Ruth Sullivan; one daughter, Sharon; two sons, John, Jr. and James; his mother of Brownville Junction; three brothers, Walter and Lawrence, both of Brownville Junction and James of Boston, Massachusetts; four sisters, Miss Marguerite Sullivan of Washington, D.C., Miss Mary Sullivan of New York City, Miss Ann Sullivan and Mrs. Edward DeYeso, both of Boston, Massachusetts.

George B. Weatherbee, M.D.

1887-1967

George B. Weatherbee, M.D., 80, of Hampden Highlands, Maine died on July 15, 1967. He was born in Carroll, Maine, May 22, 1887, the son of Lee and Daisy Weatherbee.

Dr. Weatherbee graduated from Lee Academy in 1905, Higgins Classical Institute in 1908 and received his medical degree from Tufts University School of Medicine in 1912. He interned at the Boston City Hospital from 1912 to 1913.

He began his practice in Brownville Junction where he served as physician for the Canadian Pacific Railroad from 1913 to 1915. Dr. Weatherbee practiced in Danforth from 1915 to 1917, Wytopitlock from 1917 to 1923, Springfield from 1923 to 1930, when he located in Hampden Highlands. In 1957 he was honored by the citizens of Hampden and the highlight of Dr. Weatherbee Day was the announcement that Hampden's new school was to be named the George B. Weatherbee Elementary School.

Dr. Weatherbee was an Honorary member of the Penobscot County Medical Association and the Maine Medical Association, having received a 50-year pin in 1962 and a 55-year pin at the annual session in June of this year. He was also a member of the American Medical Association, served the U.S. Government as physician for the Selective Service Board, was a trustee of the Hampden School District and of Hampden Academy, a member of the Masonic Lodge and a charter member of the Hampden Kiwanis Club and one of its directors.

Surviving are his widow, Jennie R. Weatherbee; two sons, George B., Jr. of Needles, California and John R. of Hampden; a daughter, Hope Lindsay Ryan of Hampden; three brothers, Robert and Kenneth of Lincoln and Ralph of Bedford, Massachusetts; three sisters, Mrs. Joseph McCarthy and Mrs. Stanley Seabury, both of Bedford, Massachusetts and Mrs. Lester Cobb of Lee.

William C. Burrage, M.D.

1914-1967

William C. Burrage, M.D., 53, of Portland, Maine and his wife, the former Martha M. Robinson, drowned in a boating accident off Bailey Island on July 30, 1967.

Dr. Burrage was born in Portland, Maine on March 8, 1914, the son of the late Dr. and Mrs. Thomas Burrage. He graduated from Williams College in 1935 and received his medical degree from Harvard Medical School in 1939.

He interned at the Massachusetts General Hospital from 1940 to 1941, was in the U.S. Army from 1941 to 1946, serving with the Massachusetts General Hospital Unit in Europe from 1942 to 1944. He was an assistant resident in medicine at the Massachusetts General Hospital from January 1946 to July 1946 and took a Refresher Course for Veterans at Harvard from July 1946 to October 1946. Dr. Burrage joined the Maine General Hospital staff in 1947 and entered practice in Portland specializing in internal medicine.

Dr. Burrage was a member of the Cumberland County Medical Society, the Maine Medical Association, the American Medical Association, the American Board of Internal Medicine, the American College of Physicians and was a board member of the Boys' Home and Sweetser Home.

He is survived by two sons, Thomas and Frederick; a daughter, Ann and a brother, Henry D., all of Portland.

Donald F. Macdonald, M.D.

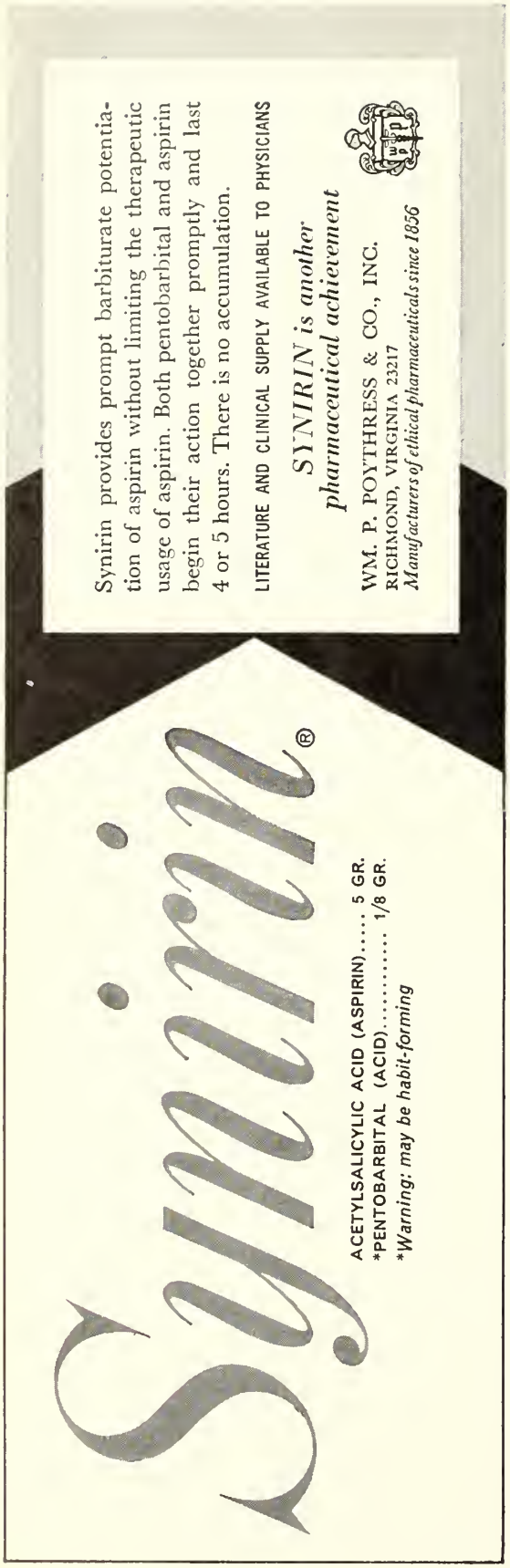
1914-1967

Donald F. Macdonald, M.D., 52, of Brewer, Maine died on August 31, 1967. He was born in Bangor, Maine, September 23, 1914, the son of Harry Eugene and Gertrude M. Macdonald.

Dr. Macdonald graduated from John Bapst High School, Bangor in 1932, the University of Maine in 1936 and received his medical degree from Tufts University School of Medicine in 1940. He interned at the Boston City Hospital from 1940 to 1941, and served a surgical residency there from 1941 to 1942, followed by a residency in obstetrics at the Boston Lying-In Hospital from 1942 to 1943. He served with the USAF during World War II attaining the rank of Major.

He was a member of the Penobscot County Medical Association, the Maine Medical Association, the American Medical Association, the Maine Society of Obstetrics and Gynecology, the New England Obstetrical and Gynecological Society and the Bangor Medical Club. Dr. Macdonald was also a fellow of the American College of Obstetricians and Gynecologists and the Society of Clinical Hypnosis, chief of obstetrics and gynecology at St. Joseph Hospital, a senior staff member of the Eastern Maine General Hospital and a consultant at the Sebasticook Valley Hospital.

Surviving are his widow, Mrs. Katherine Gross Macdonald of Brewer; two daughters, Mrs. Judith A. Fueyo of Bethlehem, Pennsylvania and Miss Katherine Jane Macdonald of Brewer; three sons, Donald F., Jr. of Warren, Rhode Island, William E. and Robert H., both of Brewer and a brother, Dr. Maxwell E Macdonald of Boston, Massachusetts.



William N. Runyon, M.D.

1916-1967

William N. Runyon, M.D., 51, of Augusta, Maine died on August 7, 1967. He was born in Plainfield, New Jersey, July 18, 1916, the son of William N. and Florence M. Runyon.

Dr. Runyon graduated from Yale University in 1938 and received his medical degree from Columbia University College of Physicians and Surgeons in 1942.

He interned at the Bassett Hospital in Cooperstown, New York from 1942 to 1943, served in the U.S. Army Medical Corps from 1943 to 1946 and served a residency at the Hartford Hospital in Connecticut from 1946 to 1950. In 1950 Dr. Runyon was recalled into the Army Medical Corps and assigned to Tokyo Army Hospital for a year and in 1951 was released from active duty with the rank of Major.

Dr. Runyon opened an office for the practice of general surgery in Augusta in 1951 and in 1966 joined the staff at the Togus Veterans Administration Center.

He was a member of the Kennebec County Medical Association, the Maine Medical Association, the American Medical Association and the American Board of Surgery.

Surviving are three daughters, the Misses Catherine W., Elizabeth B. and Emily T. of Augusta; his mother of Plainfield, New Jersey; a brother, Paul of Plainfield, New Jersey; two sisters, Mrs. Jane Randall and Miss Florence Runyon, both of Plainfield, New Jersey.

News, Notes and Announcements

A.M.A. Lectures in Clinical Nutrition

Colby College in Waterville
Tuesday, November 14 – 7:30 p.m.
Lecturer: Dr. Clarence Cohn, Director, Division of Nutritional Sciences, Michael Reese Hospital and Medical Center, Chicago, Illinois
Topic: "Some Recent Developments in Clinical Nutrition"

University of Maine in Orono
Monday, November 13 – 7:30 p.m.
Lecturer: Dr. Clarence Cohn
Topic: "Of Meals and Men – Obesity, Diabetes and Atherosclerosis"

Civilian Health and Medical Program of Uniformed Services

A meeting was held 17 August 1967 between Drs. Paul S. Hill, Jr. and Francis A. Winchenbach of the Maine Medical Association, Mr. Richard F. Nellson, Executive Director of the Associated Hospital Service of Maine, and Brigadier General Norman E. Peatfield, Executive Director of OCHAMPUS, regarding paying physicians in Maine under the "reasonable fee concept."

It was agreed that the fiscal administrator will determine and pay reasonable charges in keeping with the fee concept developed by the Social Security Administration in implementing the Social Security Amendments of 1965.

In determining reasonable charges, the fiscal administrator shall take into consideration the customary charges for similar services generally made by the source of care as well as the physicians charges in the locality for similar services.



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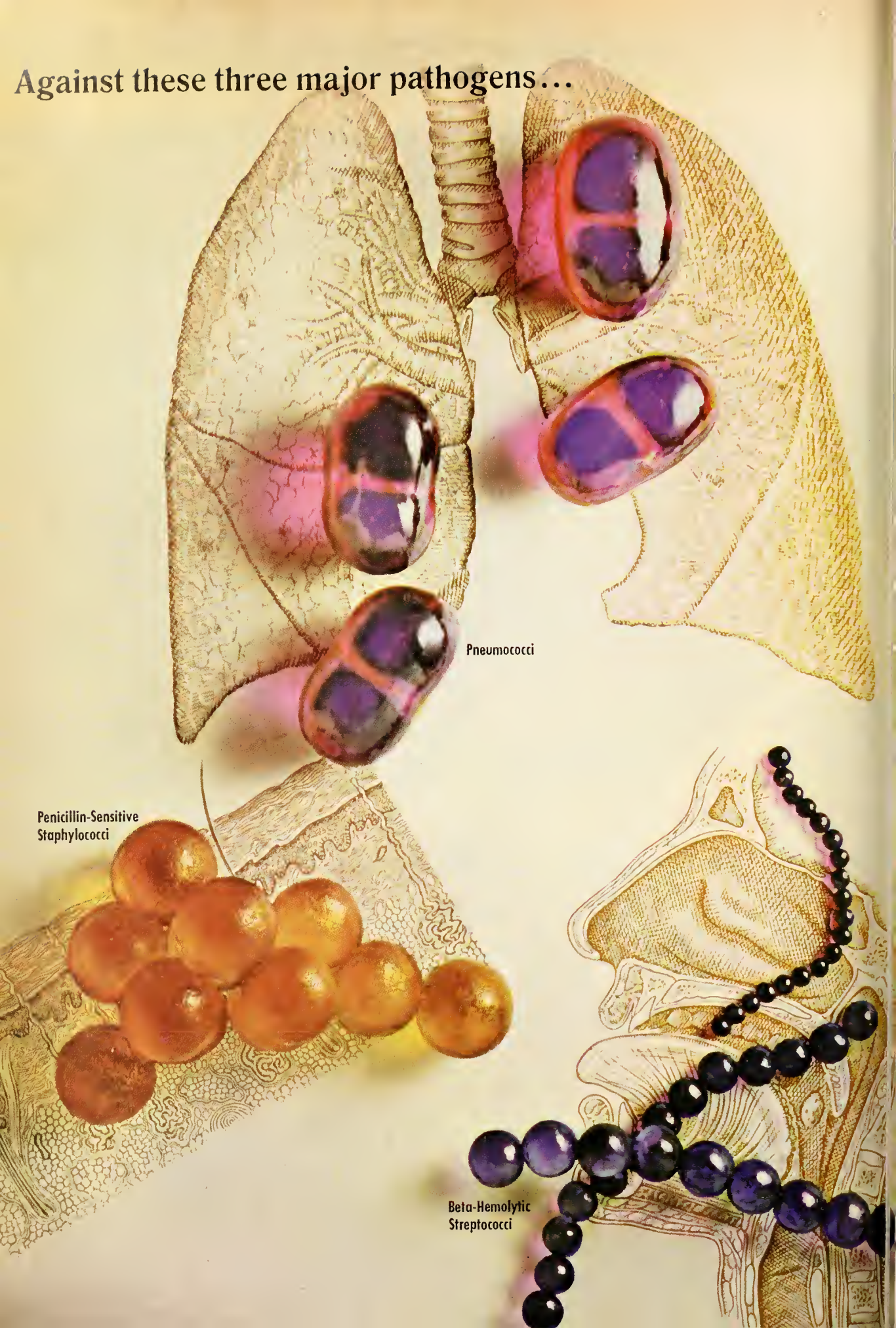
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V-Cillin K has been shown to be effective in the treatment of streptococcus and pneumococcus infections as well as infections caused by sensitive strains of staphylococci. It may be used for the prophylaxis of streptococcus infections in patients with a history of rheumatic fever and for the prevention of bacterial endocarditis after tonsillectomy in patients with a history of rheumatic fever or congenital heart disease.

with high blood levels, even when taken with food

V-Cillin K is stable in acid and immediately soluble. High serum levels, therefore, are reached rapidly. Because it is acid stable, V-Cillin K is well absorbed even when taken close to mealtime. These desirable properties help make V-Cillin K a dependable penicillin for oral use.



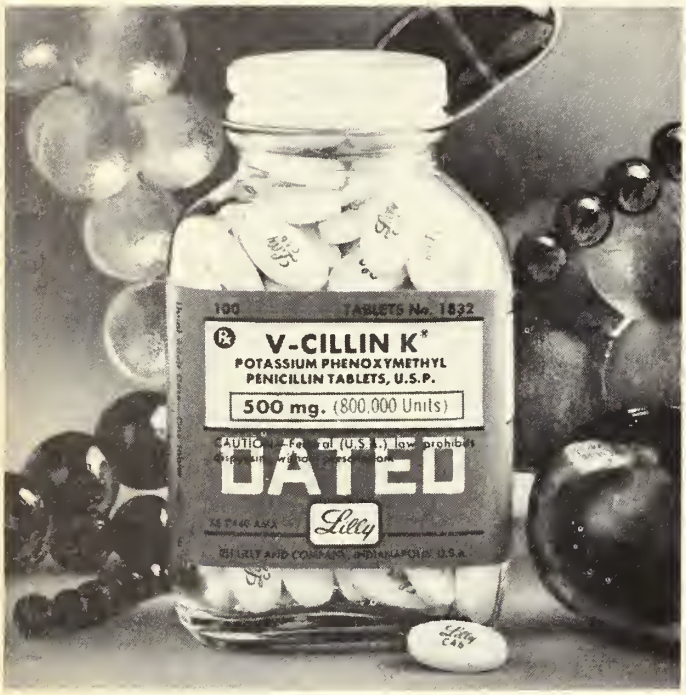
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(See next page for prescribing information.)

New 500 mg. tablets...a more convenient way to give high doses



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V-Cillin K, Pediatric, is an oral solution of clinically proved V-Cillin K in teaspoon dosage form. When mixed as directed, each 5 cc. (approximately one teaspoonful) will contain 125 mg. (200,000 units) phenoxymethyl penicillin as the potassium salt.

Indications: V-Cillin K has been shown to be effective in the treatment of streptococcus, pneumococcus, and gonococcus infections as well as infections caused by sensitive strains of staphylococci. It may be used for the prophylaxis of streptococcus infections in patients with a history of rheumatic fever and for the prevention of bacterial endocarditis after tonsillectomy and tooth extraction in those patients with a history of rheumatic fever or congenital heart disease.

Contraindication: V-Cillin K should not be administered to a patient with a history of penicillin hypersensitivity.

Warnings: In rare instances, the use of penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin and in those with bronchial asthma or other allergies. Resuscitative drugs should be readily available for emergency administration. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for relief of immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: V-Cillin K should be used cautiously, if at all, in a patient with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with high parenteral dosage schedules, frequent evaluation of the renal and hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory studies (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth of penicillin-insensitive organisms. In such cases, its administration should be discontinued, and appropriate measures should be taken.

Adverse Reactions: Although serious allergic reactions are much less common with administration of oral penicillin than with intramuscular forms, manifestations of penicillin allergy may occur.

Penicillin is a substance of low toxicity, but it does possess a significant index of sensitization. The following hypersensitivity reactions associated with the use of penicillin have been reported: skin rashes ranging from maculopapular eruptions to exfoliative dermatitis; urticaria, and reactions resembling serum sickness, including chills, fever, edema, arthralgia, and prostration. Severe and often fatal anaphylaxis has occurred (see Warnings). Hemolytic anemia, leukopenia, thrombocytopenia, and nephropathy are rarely observed side-effects and are usually associated with high parenteral dosage.

Administration and Dosage: For Tablets V-Cillin K and for V-Cillin K Pediatric, the usual dosage ranges from 125 mg. (200,000 units) three times a day to 500 mg. (800,000 units) every four hours. For infants the daily dosage may be 50 mg. per Kg. of body weight divided into three doses.

Beta-hemolytic streptococcus infections without associated bacteremia may be treated with 200,000 to 400,0000 units three times a day. Therapy should be continued for a minimum of ten days to prevent development of rheumatic fever and/or other serious complications. Dosage for routine streptococcus prophylaxis in patients with a history of rheumatic fever or congenital heart disease may be 200,000 units once or twice daily. When such patients undergo tonsillectomy, tooth extraction, or other minor surgery, the prophylactic dose should be 500,000 units every six hours given two days prior to surgery and for two days postoperatively. If oral medication is not feasible on the day of surgery, parenteral therapy should be considered. Mild to moderately severe pneumococcus pneumonia has been treated effectively with 250 mg. every six hours.

In staphylococcus infections, 400,000 units or more should be given every six to eight hours in conjunction with indicated surgical procedures.

For gonorrhea in males, 500 mg. (800,000 units) every four hours for three doses may be employed; in females, 500 mg. every four hours for six doses are recommended. Refractory infections generally respond to a second treatment three to four days following completion of the first. Treatment of gonorrhea with severe complications should be individualized, with prolonged and intensive treatment. Patients with a suspected lesion of syphilis should have a dark-field examination before receiving penicillin and monthly serologic tests for a minimum of three months.

How Supplied: Tablets V-Cillin K, U.S.P., 125 mg. (200,000 units), bottles of 50 and 100; and 250 mg., (400,0000 units) and 500 mg. (800,000 units), in bottles of 24 and 100.

V-Cillin K, Pediatric, for Oral Solution, 125 mg. (200,000 units) per 5 cc. of solution, in 40, 80, and 150-cc.-size packages. [03206]

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis, Indiana 46206.

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It was further agreed at this same meeting to modify the contract implementing this concept to a two-party arrangement; that is, between the Associated Hospital Service of Maine and OCHAMPUS. (OCHAMPUS is the Office for Civilian Health and Medical Program of the Uniformed Services, formerly the program for care of dependents of members of the armed forces, or military medicare.)

Book Review

The Thymus: Experimental and Clinical Studies. Ciba Foundation Symposium. Edited by G. E. W. Wolstenholme, O.B.E., M.A., F.R.C.P., F.I. BIOL., and Ruth Porter, M.R.C.P. Published by Little, Brown and Company, Boston, 1966. 538 pages. Price, $15.00.

Thymic immunological function is the chief target of this symposium. The subjects discussed include the structure and development of the thymus, the function of the lymphocyte and its relation to the thymus, the role of the thymus in cellular and humoral immunity, in production of leukemias and carcinogenesis, and the relationship of the thymus to autoimmune diseases.

The hypotheses and summaries of several of the contributors will now be mentioned. Mackay describes the thymus as a lympho-epithelial organ composed of a loosely cellular medulla and a compact lymphoid cortex. The normal human thymus contains no germinal centers and few plasma cells. In thymic hyperplasia, as represented by thyrotoxicosis there are usually many germinal centers. Thymic aplasia is associated with a lymphopenic subtype of agammaglobulinemia and can be secondary to malnutrition or severe disease.

Thymic dysplasia is associated with the presence of lymph follicles in the medulla as seen in myasthenia gravis. These changes are thought to be due to an immunological response to an antigen. In 30% of patients with myasthenia gravis there is an auto-antibody to the A-bands of skeletal muscles. Thymomas are associated with myasthenia gravis with bone marrow aplasia, and with adult acquired agammaglobulinemia.

Clark presents convincing evidence that in the mouse thymic medullary epithelial cells secrete a sulfated acid mucopolysaccharide which is probably the humoral factor regulating immunogenesis. This heat-labile, water-soluble material induces proliferation of lymphocytes in other lymphoid organs. The adrenal cortex may play a regulating role.

Good discusses the comparative anatomy and physiology of lymphoid tissue and speculates that thymus-dependent lymphocytes influence delayed type of hypersensitivity and cellular immunity in both chickens and mammals.

Miller stresses the importance of the integrity of the thymic epithelial-reticular cells for the differentiation of immunologically competent cells from non-competent precursors. He points out that the thymus plays a central role in the development of immunological capacity. Thymectomy at an early age interferes with the normal and complete development of the lymphoid system and impairs various immunological capacities such as delayed sensitivity, homograft rejection and antibody formation to some, but not all, antigens. Thymectomy in adult life leads to no immediate significant impairment of immune capacity unless the lymphoid system is damaged or destroyed by ionizing irradiation in which instance the anatomical and functional regeneration of this system is thymus-dependent.

Law indicates that thymectomy at three days of age in several inbred strains of mice resulted in a strikingly increased incidence of neoplasms following parenteral injections of various strains of virus. He speculates that cellular immunity is in-

removes the mental blur

that clouds vision

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Parepectolin for quick relief of acute diarrhea
...soothes colicky pain with paregoric
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Whether it's a 24-hour "bug", a food problem, or simply nervousness and anxiety, Parepectolin will bring the diarrhea under control until etiology can be determined. In some cases, Parepectolin may be all the therapy necessary.

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Each fluid ounce of creamy white suspension contains:
Paregoric (equivalent)..... (1.0 dram) 3.7 ml.
Contains opium (¼ grain) 15 mg. per fluid ounce.
warning: may be habit forming
Pectin (2½ grains) 162 mg.
Kaolin (specially purified).... (85 grains) 5.5 Gm.
(alcohol 0.69%)
Usual Adult Dose: One or two tablespoonfuls three times daily.

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voked against virus specific tumor in the intact animal. This is absent in the thymectomized animal.

Ford and Gowans show that small lymphocytes evolve into large pyroninophilic cells which in time produce more small lymphocytes. The latter may carry immunological information. Lymphocytes have to be confronted with antigen laden macrophages in order to produce antibodies.

Dameshek speculates that so-called immunocytes (plasmacytes, lymphocytes, immunoblasts) may proliferate and give rise to leukemia, lymphosarcoma, Hodgkin's disease, multiple myeloma, and become associated with abnormal immunological reactions.

Nossal and Mitchell indicate in rat experiments that tolerance occurs when there is diffuse dissemination of the antigen around the whole lymphoid system including the thymus; immunity is associated with phagocytosis and specific retention of antigen.

Strauss and van der Geld speculate that the concurrent immune reactivity against striated muscle and thymic epithelial cells noted in patients with thymomas, who do not necessarily have myasthenia gravis, is a protective mechanism rather than a cause for disease.

Dr. Burnet summarizes: the thymus is the center of lymphoid cell differentiation. Multipotential, undifferentiated cells from the bone marrow, and elsewhere, are differentiated in the thymus into immunocytes. At least 95% of the cells produced in the thymus are destroyed there. Those cells that emerge migrate to second-level lymphoid organs and represent the main or only source for the introduction of new immune patterns into the organism. Plasma cells are derived from lymphocytes. Several hormonal factors are associated with the thymus. These regulate lymphopoiesis, maintain the viability of the immunocytes which leave the thymus, and involve plasma cells.

The symposium brings thymic immunological function up to date to August 1965. This is a well-written, intellectually challenging book. The printed discussions at the end of each paper are well worth reading as they illuminate and unify the text. This symposium will be thoroughly enjoyed by the immunologist and internist.

PETER F. LANSING, M.D.
Augusta, Maine 04330

Letters to the Editor

Sept. 29, 1967

To the Editor:

I would like to introduce you to Maine's Regional Medical Program for Heart, Stroke, Cancer and Related Diseases. First of all, how did it come into being? About a year and a half ago a group of interested persons including representatives from the Maine Medical Association, Maine Osteopathic Association, Maine Hospital Association, Department of Health and Welfare, Nurses, and other agencies interested in the field of health along with private citizens got together to form a new corporation called, Medical Care Development, Inc. In a word, the purpose of this agency is to help in any way possible with the delivery of high quality medical care to all the citizenry of Maine, without interfering with the patterns, or the methods of financing, of patient care or professional practice or with the administration of hospitals.

Prompting the formation of this committee was an enactment by the Congress of the United States establishing a program for Heart, Cancer, Stroke and Related Diseases, nationwide in scope but tailored to regional needs and resources. Medical Care Development, Inc. then applied to the Federal Government for a planning grant for the State of Maine as a region to study un-

Continued on page XVIII

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met needs relative to a wide range of health concepts. The application was approved in May of 1967 under the name of Maine's Regional Medical Program for Heart, Cancer, Stroke and Related Diseases and the program is now underway. I was appointed by the Board of Directors to be program coordinator and our staff at the present moment consists of George Nilson, assistant program coordinator, Justin Cowger as the third member of our planning staff and Mrs. Phyllis Simmons, R.N., nurse consultant. We have reached the stage of obtaining some office space located at 295 Water Street, Augusta which is overlooking the Kennebec River and are in the process of getting underway. Looking at the river for any length of time will make conservationists of us all!

Okay, so what's the point and what's the program? The principle of the program simply stated is: to provide the medical professions and the medical institutions of this State a greater opportunity to make available to their patients the latest advances in the diagnosis and treatment of Heart Disease, Cancer, Stroke and Related Diseases. This objective is to be accomplished through the planning and establishment of cooperative arrangements among medical institutions for linking programs of Research, Professional Training and Continuing Education. It is hoped that through this linkage, new medical knowledge will be rapidly translated into high quality patient care. What this means is that here is a program tailored to defining and helping to solve problems in the whole field of health care existing in our State. To accomplish these objectives, the cooperation and interest of all physicians in the State is of course necessary. This is a physician-oriented program and without physician cooperation, the program, in effect, cannot exist.

Our first objective is to define local and regional needs relative to high quality patient care. We plan to approach this by contacting as many physicians as possible for their thoughts on these matters. Many areas lie within the scope of this program such as coronary care units, professional education, guest residency programs, consultation services, medical library programs and research efforts, to name a few.

We would very much like to meet with each hospital staff relative to this program in an effort to explain in detail what it is all about and, hopefully, engage their interest and participation. If this program has any interest for you, and we certainly hope that it does, please drop us a line or call collect 622-7566 relative to scheduling a mutually convenient meeting.

MANU CHATTERJEE, M.D.
Program Coordinator
Maine's Regional Medical Program for
Heart, Cancer, Stroke and Related Diseases
Augusta, Maine 04330

The above letter has been sent to Chairman, Board of Trustees Hospital Administrator.

To the Editor:

The greatest benefits in medicine would seem to be found in preventive medicine. One of the more effective measures of prevention of disease has been the immunization of children and adults. However, despite often a fine effort, there seems to be confusion as to status of immunization in many individuals with resultant only partial protection or total lack of protection.

A plastic, wallet size card perhaps like the one used in New Hampshire, but perhaps without using the IBM system as was used there, would seem most helpful particularly in letting people know their needs and their children's needs. There are available cards, but these are either too bulky or not durable. A single uniform system using a wallet size durable card would seem to be a great aid in being sure everyone was protected.

ROWLAND B. FRENCH, M.D.
Eastport, Maine 04631

DORSEY "FLU-GRAM"

DON'T BE LULLED BY RELATIVE LACK OF FLU LAST WINTER. THIS WINTER BE PREPARED: WHEN THE COMPLAINTS ARE COUGH AND CONGESTION, YOU CAN RELIEVE THESE SYMPTOMS WITH TUSSAGESIC TABLETS. ONE TIMED-RELEASE TABLET AT MORNING, MIDAFTERNOON AND BEDTIME BRINGS UP TO 24 HOURS' RELIEF FROM TROUBLESOME COUGH AND STUFFED AND RUNNY NOSE. TUSSAGESIC IS THE FAMOUS TRIAMINIC FORMULA, PLUS THREE OTHER PROVED CONSTITUENTS. MAKES PATIENTS MORE COMFORTABLE. FAST. ASK YOUR DORSEY REPRESENTATIVE FOR SUPPLY OF STARTER SAMPLES, OR IF FLU IS ALREADY EPIDEMIC, PHONE COLLECT. SEE BELOW.

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Tussagesic®

timed-release tablet contains:

Triaminic® (phenylpropanolamine hydrochloride 25 mg., pheniramine maleate 12.5 mg., pyrilamine maleate 12.5 mg.)	50 mg.
Dextromethorphan hydrobromide	30 mg.
Terpin hydrate	180 mg.
Acetaminophen	325 mg.

Dosage: Adults—1 tablet, swallowed whole to preserve timed-release feature, in morning, midafternoon and at bedtime. Side effects: Occasional drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. Precautions: The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

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Tuinal helps wakeful patients fall asleep fast, stay asleep all night.

Indications: Tuinal is indicated for prompt and moderately long-acting hypnosis. It is not suitable for continuous daytime sedation.

Contraindications: Barbiturates should not be administered to anyone with a history of porphyria, nor should they be given in the presence of uncontrolled pain, because excitement may result.

Warning: May be habit-forming.

Precautions: Tuinal should be used cautiously in patients with decreased liver function, since prolongation of effect may occur.

Adverse Reactions: Idiosyncrasy, such as excitement, hangover, or pain, may appear. Hypersensitivity reactions occur in some patients, especially in those with asthma, urticaria, or angioneurotic edema.

Overdosage: C.N.S. depression. Symptoms—Depression of respiration and of superficial and deep reflexes, slight constriction of the pupils (in severe poisoning, dilation), decreased urine formation, lowered body temperature, coma. Treatment—Symptomatic and supportive (gastric lavage; intravenous fluids; maintenance of blood pressure, body temperature, and adequate respiration). Dialysis may speed removal of barbiturates from body fluids.



Dosage: 50-200 mg. (¾-3 grains) at bedtime.

[031767]

Additional information available to physicians upon request.
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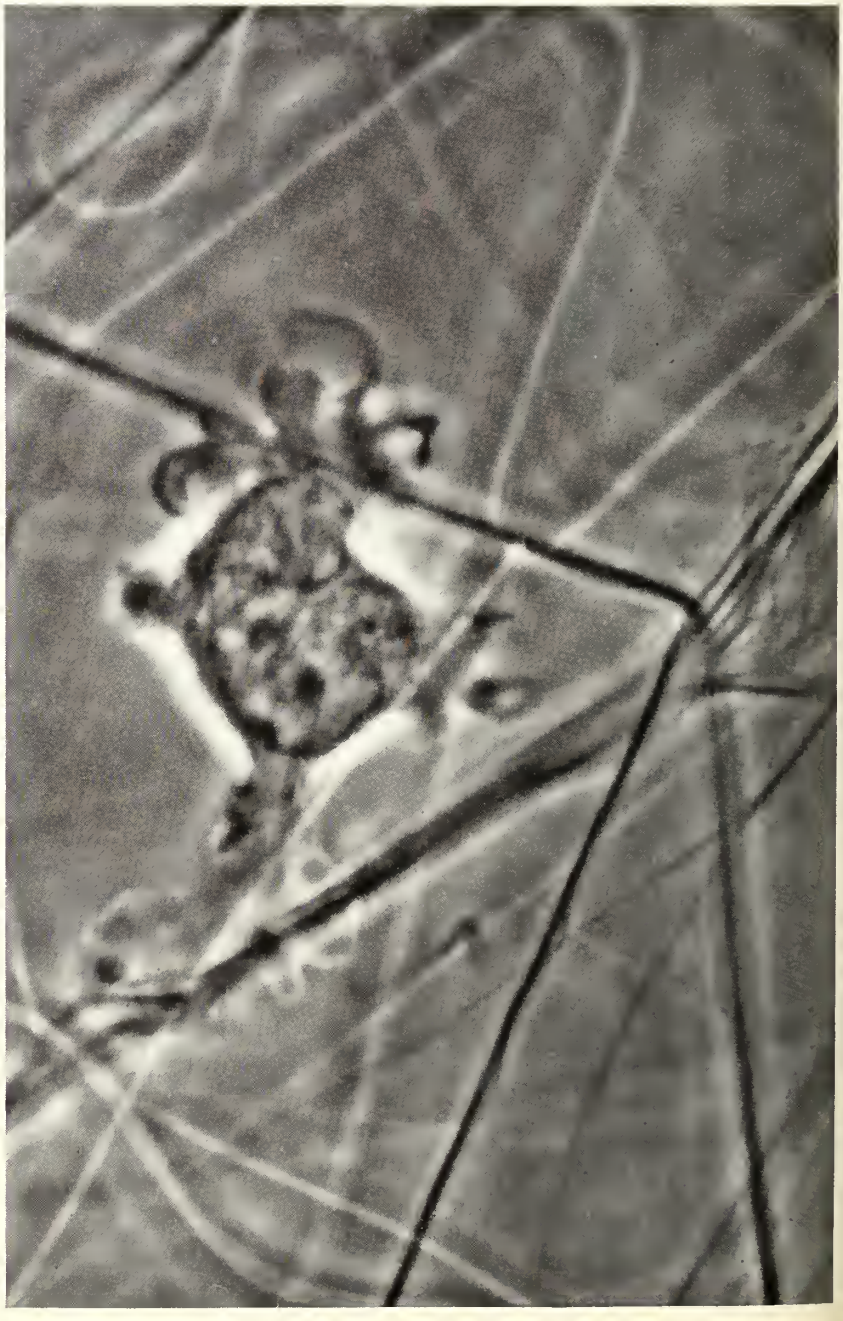
Lilly

INFLAMMATION:
A cellular fight for life

A SYNTEX REPORT based on recently developed hypotheses about topical corticosteroids, including the cellular theories of inflammation by Thomas F. Dougherty, Ph.D., University of Utah.

You are looking at a fibroblast fighting for life. This cell—one of the most common found in connective tissue—has literally been poisoned by cytotoxins released from other cells that have ruptured. Soon, if the abnormal activity of this fibroblast does not cease, it, too, will rupture and die—one more casualty in the inflammatory wave of destruction precipitated by injury.

Until a short time ago no one had ever witnessed such a scene at the cellular level. Now, through advanced cinemicrographic techniques, it is possible to view and photograph the inflammatory process as produced experimentally in living animal tissue. This method permits new insight into the mechanism of inflammation and the role of corticosteroids in therapeutic management. Equally important, these techniques shed new light on factors that may make one corticosteroid more effective than another—factors that can be correlated with other chemical, biologic, and clinical parameters.

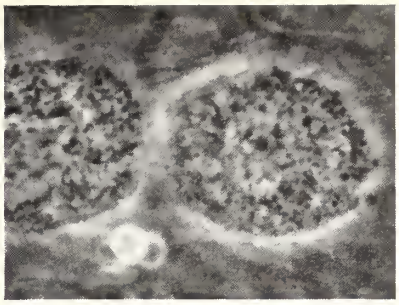


Visual evidence of how corticosteroids influence the inflammatory reaction

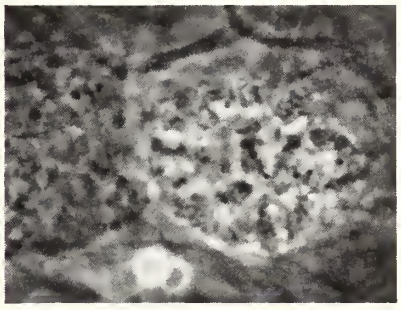
Working with phase-contrast cinemicrography on living animal tissue, Doctors Thomas F. Dougherty and David Berliner of the University of Utah College of Medicine have actually filmed cellular events that occur during the inflammatory reaction. This remarkable study* and additional work by these investigators, as well as by others, have established a new theoretical biologic basis for the antiinflammatory effect of the corticosteroids. (It must be noted that other theories, such as the lysosome or so-called "suicide bag" theory, have been postulated, although it is quite likely that there are more similarities than differences among the various theoretical models.)

The inflammatory wave of destruction

In this investigation an injurious injection of gelatin is used to set off an inflammatory reaction in living mouse tissue. What follows is a wave of destructive cellular activity that comprises the inflammatory response to injury. Mast cells (which contain heparin, serotonin and histamine) take up water, swell and rupture, releasing their contents, which are toxic outside the mast cell wall. These toxins, in turn, cause disintegration of other cells (such as fibroblasts) and the release of additional toxic material. Capillaries, too, take up water and leak unformed blood elements, causing edema. And polymorphonuclears, lymphocytes and perithelial cells invade the inflamed site. As a result of all these changes, the cellular environment reaches a state of turmoil.



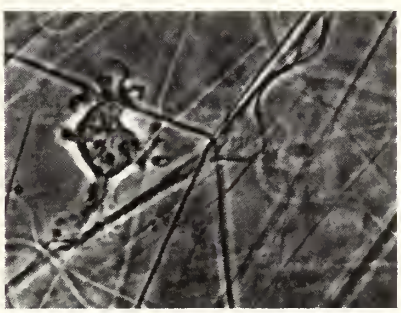
Phase-contrast microscopy showing mast cell before injury.



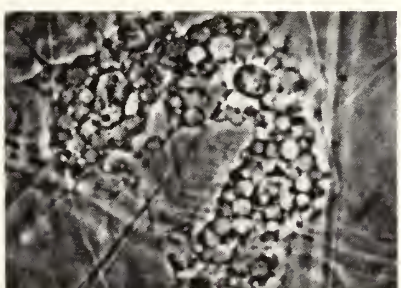
Mast cell (after injury) has broken up and released cytotoxins.

How corticosteroids change the picture

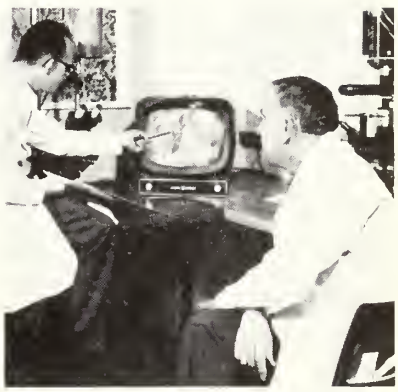
Corticosteroids appear to virtually stop the abnormal cellular activity that constitutes the inflammatory reaction. This permits the body's natural resources to clear up the inflamed area and repair the damaged tissue. This interpretation is supported by the fact that when the injurious gelatin solution is injected simultaneously with a corticosteroid —Synalar (fluocinolone acetonide)— the inflammatory pattern simply does not develop.



Fibroblast in high state of activity, much distorted.



Mast cells showing effects of corticosteroid action: cells are normal in size, shape and activity.



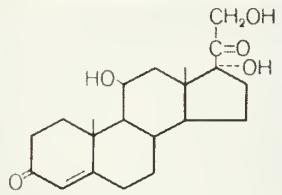
In summarizing his study Doctor Dougherty states: "...we also feel this work may explain why one corticosteroid helps a patient more rapidly and effectively than another. If it does, it is because one corticosteroid is the fastest, most effective inhibitor of the series of inflammatory events at the tissue level."

A New View of Corticosteroid Action in Inflammatory Dermatoses, a film based on this study, is now available from your Syntex representative.

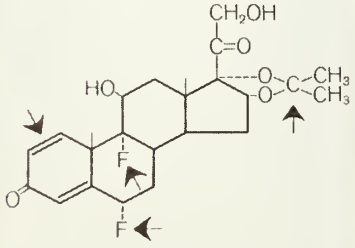
See last page for contraindications, precautions, side effects and dosage.

How advances in chemical design have achieved greater steroid potency

The chemical modification of corticosteroid molecules from the advent of hydrocortisone to the development of Synalar (fluocinolone acetonide) is a prime example of how biochemists can "design" to increase therapeutic activity and minimize undesirable side actions. Below, for example, we see the important changes that were made in reference to the hydrocortisone molecule to produce fluocinolone acetonide, one of the most active of all topical corticosteroids. As a result, a 0.01% preparation of Synalar (fluocinolone acetonide) has been reported to do the work of a 1% hydrocortisone product containing 100 times more cortiscosteroid. And it can often do it more effectively.



Hydrocortisone

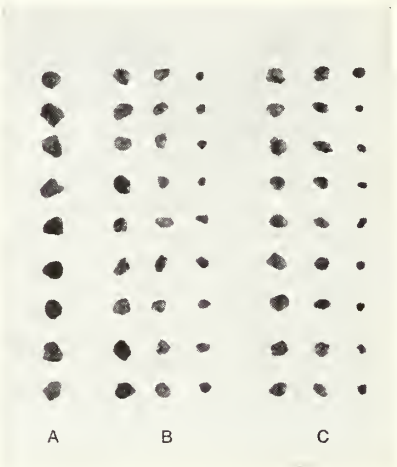


Fluocinolone Acetonide (Synalar)

- *a double bond between carbons 1 and 2*
- *fluorine substitutions at* both *the 6-α, and the 9-α positions*
- *the addition of the acetonide at the 16-α, 17-α positions, thus providing one of the most potent topical corticosteroids available.*

How bioassay tests are used to "predict" therapeutic potential

Biologic assays are another tool used by researchers to help establish the relative activity of corticosteroids. To date no single method of assaying corticosteroid activity has emerged as the ideal "yardstick" for predicting therapeutic potential. Taken together, however, these methods have proved useful. When such tests are run on various corticosteroids, a definite order of corticosteroid activity becomes evident. Compounds with the highest order of activity may be expected to merit clinical trial to establish their high therapeutic potential. When assayed by these methods, fluocinolone acetonide (Synalar) emerges as one of the most active topical corticosteroids, milligram for milligram, available for clinical application today.



THE THYMUS INVOLUTION ASSAY[1-4] is run on adrenalectomized rats. The sizes of the glands are measured, and the degree of involution caused by the steroid is determined as an indication of its potency. In the above photo, the comparative involution of thymus glands achieved with hydrocortisone and Synalar (fluocinolone acetonide) is shown. Untreated controls (A) show normal size. Group B – injected with 1, 2 and 4 mg. of hydrocortisone – show progressively smaller thymuses as does Group C – injected with fluocinolone acetonide – but with only 1/500th the dose of hydrocortisone.



THE ANTIGRANULOMA ASSAY[1-4] also utilizes adrenalectomized rats. Granulomas are induced by subcutaneous implantation of cotton pellets on either side of the thorax. The degree of granuloma inhibition achieved by a steroid reflects its potency. The above photo shows the inhibition of granuloma formation achieved with hydrocortisone and Synalar (fluocinolone acetonide). Untreated controls (A) show large, red granulomas adhering to the pellets. Group B, receiving hydrocortisone and Group C, receiving fluocinolone acetonide, show little, if any, granuloma formation. Fluocinolone acetonide produced the same effect as hydrocortisone with only 1/500th the dose. This assay, as well as the thymus involution assay, measures systemic rather than topical corticosteroid activity. Nevertheless, results by these methods correlate well with other assays and with the milligram potencies of topical steroids in current clinical use.

Worldwide clinical experience confirms the predictable therapeutic potential of Synalar

It is particularly gratifying that the promise of the advanced chemical design and high order of bioassay activity of Synalar (fluocinolone acetonide) has been confirmed by widespread therapeutic application. Indeed, the impressive clinical response rate of Synalar has been documented in no fewer than 232 papers from 22 countries.

Representative Clinical Results with Synalar*

Efficacy Documented in over 4,000 Patients

Condition	Number of Publications	Number of Patients	Significant Improvement†
Contact Dermatitis	27	750	713
Eczematous Dermatitis	21	472	409
Seborrheic Dermatitis	18	442	426
Atopic Dermatitis	24	460	426
Psoriasis	36	1,699	1,510
Neurodermatitis	18	351	324
Total	144	4,174	3,808

*Complete bibliography on request.

†Expressed by the authors as excellent, very good, good, complete remission of inflammation, etc.

PRESCRIBING INFORMATION

For initiation of therapy: Cream 0.025%, 5 and 15 Gm. tubes, 425 Gm. jars; *for emollient effect:* Ointment 0.025%, 15 Gm. tubes; *for maintenance therapy:* Cream 0.01%, 15 and 45 Gm. tubes, 120 Gm. jars; *for intertriginous or hairy sites:* Solution 0.01%, 20 cc. and 60 cc. plastic squeeze bottles; *for infected inflammatory dermatoses:* Neo-Synalar® Cream (0.025% fluocinolone acetonide, neomycin sulfate, equivalent to 0.35% neomycin base), 5 and 15 Gm. tubes. CONTRAINDICATIONS: Tuberculous, fungal, and most viral lesions of the skin, (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of the components. PRECAUTIONS: Synalar preparations are virtually nonsensitizing and nonirritating. However, the solution may produce burning or stinging when applied to denuded or fissured areas. In some patients with dry lesions, the solution may increase dryness, scaling or itching. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. Prolonged use of any antibiotic may result in overgrowth of nonsusceptible organisms; if this occurs, appropriate therapy should be instituted. When severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. SIDE EFFECTS: Side effects are not ordinarily encountered with topically applied corticosteroids. As with all drugs, however, a few patients may react unfavorably to Synalar under certain conditions. The neomycin in Neo-Synalar Cream rarely produces allergic reactions.

REFERENCES: 1. Lerner, L. J., Bianchi, A., Turkheimer, A. R., Singer, F. M., and Borman, A.: Anti-inflammatory steroids: potency, duration and modification of activities. Ann NY Acad Sci 116:1071 (Aug. 27) 1964. 2. Idem: Comparison of anti-granuloma, thymolytic and glucocorticoid activities of anti-inflammatory steroids. Proc Soc Exp Biol Med 116:385 (June) 1964. 3. Ringler, A.: Activities of adrenocorticosteroids in experimental animals and man, in Dorfman, R. I.: Methods of hormone research, New York, Academic Press, 1964. vol. III. pp. 234-280. 4. Gubersky, V. R.: To be published.

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Results often comparable to those of systemic corticosteroids with fewer hazards

Before prescribing, see complete prescribing information in SK&F literature or *PDR*. A brief precautionary statement follows.
Contraindications: Glaucoma, prostatic hypertrophy, stenosing peptic ulcer, pyloroduodenal obstruction, or bladder neck obstruction.
Precautions: Use cautiously in the presence of hypertension, hyperthyroidism, coronary artery disease; warn vehicle or machine operators of possible drowsiness.
Usage in Pregnancy: Use cautiously, especially in the first trimester. *Note:* The iodine in isopropamide iodide may alter PBI test results and will suppress I^{131} uptake; discontinue 'Ornade' one week before these tests.
Adverse Reactions: Drowsiness; excessive dryness of nose, throat or mouth; nervousness; insomnia. Other known possible side effects of the individual ingredients: nausea, vomiting, diarrhea, rash, dizziness, fatigue, tightness of chest, abdominal pain, irritability, tachycardia, headache, difficulty in urination. Thrombocytopenia, leukopenia and convulsions have been reported but no causal relationship has been established.



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Each capsule contains 8 mg. of Teldrin® (brand of chlorpheniramine maleate), 50 mg. of phenylpropanolamine hydrochloride, and 2.5 mg. of isopropamide, as the iodide.

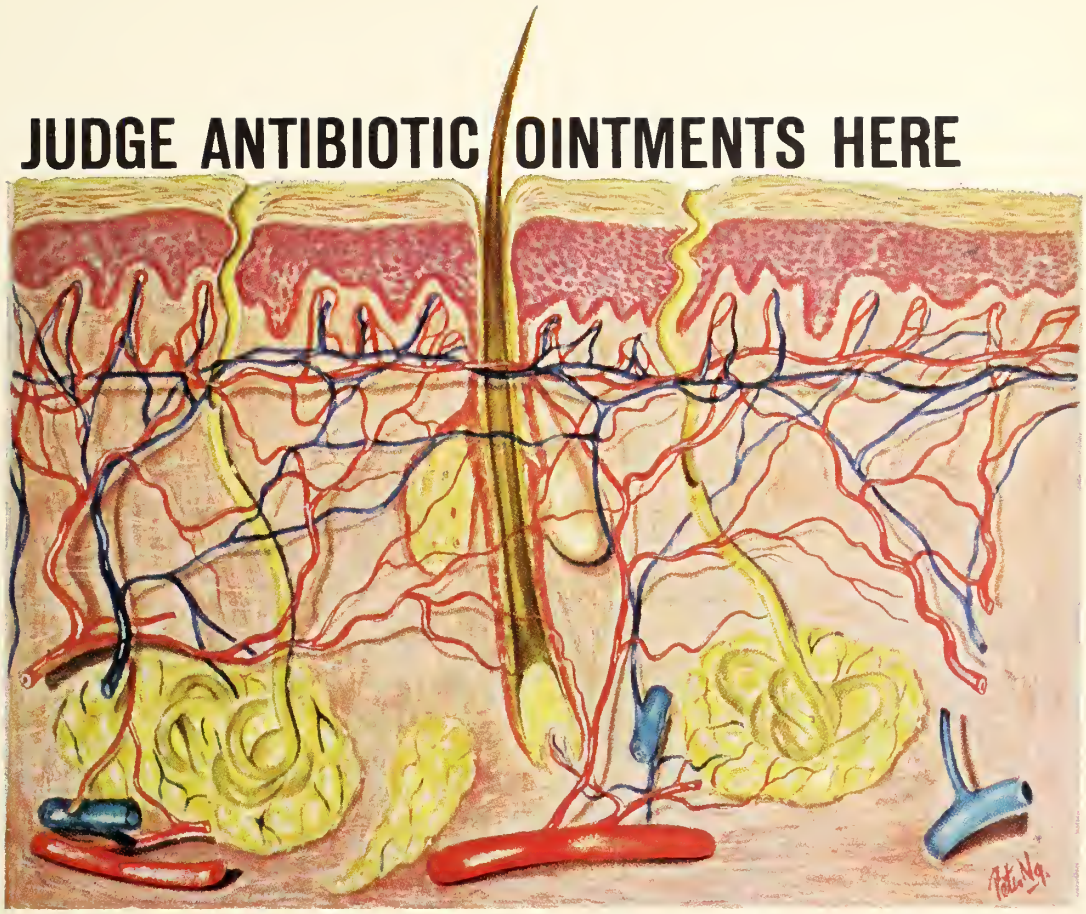
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Caution: As with other antibiotic preparations, prolonged use may result in overgrowth of nonsusceptible organisms and/or fungi. Appropriate measures should be taken if this occurs. Articles in the current medical literature indicate an increase in the prevalence of persons allergic to neomycin. The possibility of such a reaction should be borne in mind.

Contraindications: This product is contraindicated in those individuals who have shown hypersensitivity to any of its components.

Supplied: Tubes of 1 oz., ½ oz. with applicator tip, and ⅛ oz. with ophthalmic tip.

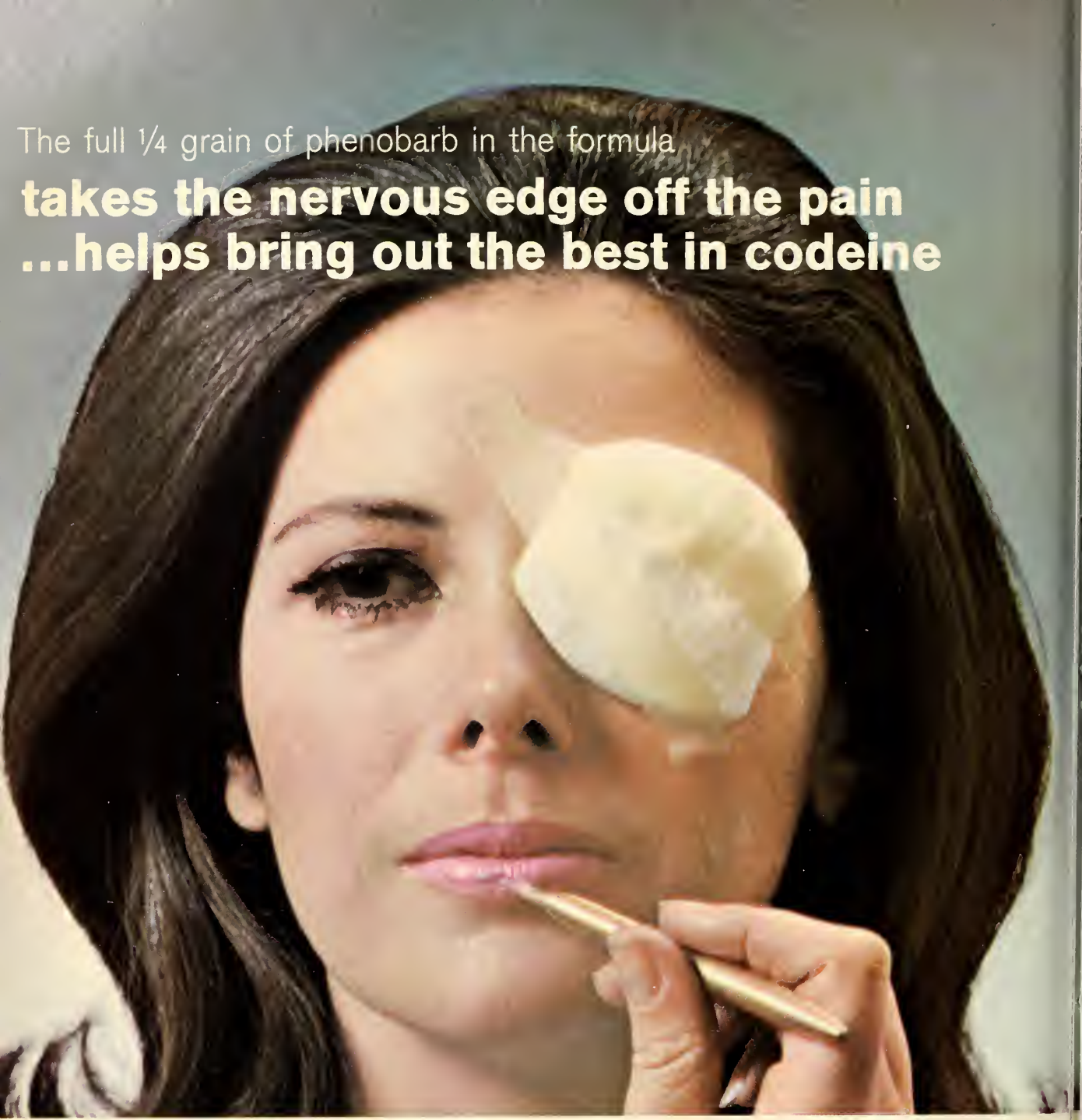
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Phenobarbital (¼ gr.) 16.2 mg.
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Phenacetin (3 gr.) 194.0 mg.
Hyoscyamine sulfate.....0.031 mg.
Codeine phosphate.....¼ gr. (No. 2), ½ gr. (No. 3), 1 gr. (No. 4)
(Warning: may be habit forming)

Contraindications: Hypersensitivity to any ingredient.

Precautions: As with all phenacetin-containing products, avoid excessive or prolonged use.

Side Effects: Side effects are uncommon—nausea, constipation, and drowsiness have been reported.

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timed to work while your patient does

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Begun in March 1966, the study to date has encompassed 85 patients with common nasal disorders—and measured their response to recommended doses of Triaminic tablets.

Timed to release its oral nasal decongestant and *two* antihistamines within 8 hours, Triaminic was found to effect partial or complete relief in better than 82% of the subjects treated. Clearing nasal obstruction. Reducing turbinate swelling. Making breathing easier.

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Triaminic® *timed-release tablets*

Each timed-release tablet contains:

Phenylpropanolamine hydrochloride 50mg. Pyrilamine maleate 25mg. Pheniramine maleate 25mg.

Side effects: Occasional drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets.

Precautions: The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

DORSEY LABORATORIES • *a division of The Wander Company* • **LINCOLN, NEBRASKA** 68501



Unique Nitrospan micro-dialysis process* adds an important dimension–TIME–to nitroglycerin therapy

Helps decrease frequency and severity of attacks; often increases exercise tolerance. Decreases need for sublingual nitroglycerin, increases patient confidence. Smooth, continuous release independent of gastrointestinal functions reduces headache and other side effects that might result from peak concentrations of tablet or intermittent-release preparations.

Indication and Dosage: For prophylactic use only in angina pectoris, 1 capsule every 12 hours. **Precautions:** For prophylaxis only, not for relief of acute anginal attacks. Tolerance to nitrites may develop on long-continued use. **Contraindications:** Idiosyncrasy to nitroglycerin, and early myocardial infarction. **Side Effects:** With use of nitrites, transient headache, postural hypotension, nausea and vomiting may occur. Overdoses may cause flushing, dizziness, tachycardia, headache and syncope.

*__The micro-dialysis cell.__ Nitrospan's timed-release mechanism is different from those usually employed in sustained-action capsules, which rely on unpredictable digestive processes. The nitroglycerin in Nitrospan capsules is contained within hundreds of dialysis cells of controlled permeability. The contents of each micro-dialysis cell are released by diffusion rather than disintegration, at a continuous rate independent of gastrointestinal action. Only the presence of fluid is required.



NEW from USV **NITROSPAN®** CAPSULES

brand of **nitroglycerin** 2.5 mg. in micro-dialysis cells

For a starter supply of NITROSPAN, write: USV PHARMACEUTICAL CORPORATION, 800 Second Avenue, New York, N.Y. 10017

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A Building Block approach to treating hypertension

With these three therapeutic building blocks you can create a once-a-day regimen to fit almost any degree of hypertension. See the following pages for details . . .



Consider starting your hypertensives on this basic thiazide

ABBOTT

A single daily dose of Enduron provides sodium excretion around the clock

Enduron is a true 24-hour single-dose thiazide. Its sodium excretion is not squeezed into an abrupt peak during the first several hours. It is well-sustained in a plateau-like effect—with little reduction for the first 12 hours, and decline thereafter only gradual.

Potassium loss, by contrast, is low. It reaches an early minor peak, then subsides rapidly. Moreover, since dosage is but once a day, there is but one daily peak of potassium loss. As with all thiazides, however, dietary potassium supplementation should also be considered, especially in long or intensive therapy.

Use Enduron as an ideal starting therapy in mild hypertension. Use it too, as a basic therapeutic building block with which other agents can be joined, for managing your more resistant hypertensives.

Once a day, every day

ENDURON®
METHYCLOTHIAZIDE



DAILY DOSAGE RANGE	Minimum	Usual	Intermediate	Maximum
	2.5 mg. tablet	5 mg. tablet	7.5 mg.	10 mg.

See Brief Summary on final page of advertisement.

To build added response, shift to Enduronyl

ABBOTT

The deserpidine component adds enhanced antihypertensive activity

The rauwolfia component of Enduronyl is deserpidine (Harmonyl®), a purified crystalline alkaloid supplied only by Abbott. It augments Enduron with its own antihypertensive and tranquilizing action.

Thus the combined clinical effect of these two therapeutic building blocks in Enduronyl is greater than can ordinarily be achieved with either alone.

To add flexibility, Enduronyl comes in two strengths: regular and Forte. Both provide 5 mg. of Enduron. The variation is where most helpful: in the deserpidine. The tablets are scored, and give a surprisingly wide and economical choice of once-a-day doses (see below).

Choose Enduronyl for your patients in the broad range of mild to moderate hypertension. Patient acceptance is excellent!



Once a day, every day

ENDURONYL®

METHYCLOTHIAZIDE 5 MG. WITH DESERPIDINE 0.25 MG.

ENDURONYL FORTE

METHYCLOTHIAZIDE 5 MG. WITH DESERPIDINE 0.5 MG.

	Minimum	Usual	Intermediate	Maximum
DAILY DOSAGE RANGE	2.5 mg. methyclothiazide 0.125 mg. deserpidine	5 mg. methyclothiazide 0.25 mg. deserpidine	7.5 mg. methyclothiazide 0.375 mg. deserpidine	10 mg. methyclothiazide 0.5 mg. deserpidine
DAILY DOSAGE RANGE	2.5 mg. methyclothiazide 0.25 mg. deserpidine	5 mg. methyclothiazide 0.5 mg. deserpidine	7.5 mg. methyclothiazide 0.75 mg. deserpidine	10 mg. methyclothiazide 1 mg. deserpidine

See Brief Summary on final page of advertisement.

707075-R

Eutonyl affords a different kind of basic therapy for moderate to severe cases

ABBOTT

Effect tied to reduced peripheral vascular resistance; no central depressant action

Eutonyl is a unique nonhydrazine agent. It is reported to act by reducing peripheral vascular resistance.[1,2]

In clinical trials, significant reductions in mean blood pressure were seen in 84% of patients studied—all were moderate to severe cases. Eutonyl lowers diastolic in proportion to systolic, and in about half of the cases studied, reductions in the sitting and recumbent positions were nearly as great as in the standing position.

Most important: There is no central depressant action. In fact, some patients reported an *increased* sense of well being.

Here, then, is a highly effective *basic treatment* for moderate to severe cases—and one that will not hamper your patient with lethargy or drowsiness while on treatment.

Once a day, every day

EUTONYL®
PARGYLINE HYDROCHLORIDE



DAILY DOSAGE RANGE	Minimum	Usual starting	Intermediate	Maximum
	10 mg. tablet	25 mg. tablet	50 mg. tablet or as needed	200 mg.

1. Brest, A. N., et al., Cardiac and Renal Hemodynamic Response to Pargyline, Ann. N. Y. Acad. Sci., 107-1016, 1963.
2. Winsor, T., Pargyline Hydrochloride, Hypertension, Urinary Tryptamine, and Vascular Reflexes, Geriatrics, 19:598, Aug., 1964.

See Brief Summary on final page of advertisement.

Eutron adds thiazide for enhanced therapy with milder side effects

ABBOTT

Only a 7/4 mm. span between standing and recumbent pressures in clinical trials—reduced chance of orthostatic hypotension

The combining of Eutonyl and Enduron in Eutron permits a significantly greater antihypertensive effect than with either agent used alone. This in turn may allow therapeutic success with lesser dosage—and correspondingly milder side effects.

A significant finding in clinical trials was the drug's action in lowering blood pressure to *nearly equal levels in all body positions*. Total average spread between standing and recumbent readings (after treatment) was only 7/4 mm. Hg.

Thus, in your moderate to severe cases, Eutron affords a usually smooth course of therapy, often with reduced likelihood of orthostatic effects. (The usual precautions against rising suddenly, of course, will always apply.) And, because of the thiazide component, Eutron may be used in the presence of congestive heart failure.



Once a day, every day

EUTRON™

PARGYLINE HYDROCHLORIDE 25 MG.
WITH METHYCLOTHIAZIDE 5 MG.

	Minimum	Usual starting	Intermediate	Maximum
DAILY DOSAGE RANGE	12.5 mg. pargyline hydrochloride and 2.5 mg. methyclothiazide	25 mg. pargyline hydrochloride and 5 mg. methyclothiazide	37.5 mg. pargyline hydrochloride and 7.5 mg. methyclothiazide	50 mg. pargyline hydrochloride and 10 mg. methyclothiazide

See Brief Summary on final page of advertisement.

TM—Trademark

707075-R

ENDURON | ENDURONYL

METHYCLOTHIAZIDE

Each tablet contains
Methyclothiazide 5 mg. with
Deserpidine 0.25 mg. or 0.5 mg.

Indications: Enduron is used to control edema and mild to moderate hypertension; also used with other drugs for hypertension. Enduronyl is used in mild to moderately severe hypertension; when used with Enduronyl, more potent agents can be given at reduced dosage to minimize undesirable side effects.

Contraindications: Neither Enduron nor Enduronyl should be used in severe renal disease (except nephrosis) or shutdown; in severe hepatic disease or impending hepatic coma; in patients sensitive to thiazides. Hepatic coma has been reported as a result of hypokalemia in patients receiving thiazides.

Enduronyl is contraindicated in patients with severe mental depression and suicidal tendencies, active peptic ulcer, or ulcerative colitis.

Warnings: Consider possible sensitivity reactions in patients with a history of allergy or asthma. If added potassium intake is indicated, dietary supplementation is recommended. Enteric-coated potassium tablets should be reserved for cautious use only when adequate dietary supplementation is not practical because those tablets may induce serious or fatal small bowel lesions consisting of stenosis with or without ulceration. These small bowel lesions have caused obstruction, hemorrhage and perforation frequently requiring surgery. Medication should be discontinued immediately if abdominal pain, distension, nausea, vomiting or GI bleeding occurs.

Precautions: Use thiazides with caution in severe renal dysfunction, impaired hepatic function, or progressive liver disease. In surgical patients, thiazides may reduce the response to vasopressors and increase the response to tubocurarine. Use thiazides with caution in pregnancy (bone marrow depression, thrombocytopenia, or altered carbohydrate metabolism have been reported in certain newborn infants). Also reported have been: blood dyscrasias including thrombocytopenia with purpura, agranulocytosis and aplastic anemia; elevations of BUN, serum uric acid, or blood sugar. Symptomatic gout may be induced. Antihypertensive response may be enhanced following sympathectomy.

Use Enduronyl with caution in patients with a history of peptic ulcer, as rauwolfias may increase gastric secretion. Discontinue at the first sign of mental depression. Rauwolfia alkaloids may increase hypotensive effects of surgery or anesthesia, and should be discontinued two weeks prior. They also lower the convulsive threshold and shorten seizure latency. In epilepsy, dosage adjustment of anticonvulsant medication may be necessary. Alcohol, barbiturates, or narcotics may potentiate action of deserpidine.

Adverse Reactions: During intensive or prolonged therapy, guard against hypochloremic alkalosis and hypokalemia (especially the latter if patient is on digitalis). All patients should be observed for signs of hyponatremia ("low-salt" syndrome). Reported thiazide reactions include: anorexia, nausea, vomiting, diarrhea, headache, skin rash, dizziness, paresthesia, weakness, photosensitivity, jaundice, and pancreatitis.

Reported rauwolfia reactions include: nasal stuffiness, nausea, weight gain, diarrhea, aggravation of peptic ulcer, epistaxis, skin eruption, and reduction of libido and potency. Excessive drowsiness, fatigue, weakness, and nightmares may signal early signs of mental depression.

EUTONYL | EUTRON™

PARGYLINE HYDROCHLORIDE

Each tablet contains
Pargyline Hydrochloride 25 mg.
with Methyclothiazide 5 mg.

Indications: For treatment of patients with moderate to severe hypertension, especially those with severe diastolic hypertension. Not recommended for patients with mild or labile hypertension amenable to therapy with sedatives and/or thiazide diuretics alone. It is desirable to establish the dosage of Eutron by administering component drugs separately.

TM-Trademark.

Contraindications: Pheochromocytoma, advanced renal disease, increasing renal dysfunction, paranoid schizophrenia and hyperthyroidism. Hepatic coma has been reported as consequence of hypokalemia with thiazide therapy. Until further experience is gained not recommended for patients with malignant hypertension, children under 12, or pregnant patients.

Concomitant use of the following is contraindicated: other monoamine oxidase inhibitors; parenteral forms of reserpine or guanethidine; sympathomimetic drugs; foods high in tyramine such as cheese; imipramine and amitriptyline, or similar antidepressants; methyldopa. 2 week interval should separate therapy and use of these agents.

Methyclothiazide is contraindicated in patients with known sensitivity to thiazides.

Warnings: Pargyline hydrochloride is a monoamine oxidase inhibitor. Warn patients against eating cheese, and using alcohol, proprietary drugs or other medication without the knowledge of the physician. When indicated, alcohol, narcotics (meperidine should be avoided), antihistamines, barbiturates, chloral hydrate, and other hypnotics, sedatives, tranquilizers, or caffeine, may be used cautiously in reduced dosage. In emergency surgery ¼ to ⅕ the usual dose of narcotics, analgesics, and other premedications should be used avoiding parenteral administration where possible. Carefully adjust dose of anesthetics to response of patient. Withdraw pargyline two weeks before elective surgery.

Warn patients about the possibility of postural hypotension. Those with angina or coronary artery disease should not increase physical activity with an improvement in well being. Pargyline may lower blood sugar.

Avoid use of enteric-coated potassium tablets, as these may induce serious or fatal small-bowel lesions consisting of stenosis with or without ulceration. These small-bowel lesions have caused obstruction, hemorrhage and perforation frequently requiring surgery. Medication should be discontinued immediately if abdominal pain, distension, nausea, vomiting or GI bleeding occurs. These products contain no added potassium salts and if added potassium intake is desired, dietary supplementation is recommended. Coated potassium tablets should be reserved for cautious use when adequate dietary supplementation is impractical. In patients with a history of allergy or asthma the possibility of sensitivity reactions should be considered.

Precautions: Measure blood pressure while patient is standing to determine antihypertensive effect. Use with caution in hyperactive or hyperexcitable persons. Such persons may show increased restlessness and agitation. Withdraw drug during acute febrile illness. Watch patients with impaired renal function for increasing drug effects or elevation of BUN and other evidence of progressive renal failure; withdraw drug if such alterations persist and progress. Use with caution in patients with liver disease. As with all new drugs, complete blood counts, urinalyses, and liver function tests should be performed periodically. With prolonged therapy, examine patients for change in color perception, visual fields and fundi. Also reported have been: blood dyscrasias including thrombocytopenia with purpura, agranulocytosis and aplastic anemia; elevations of BUN, serum uric acid, or blood sugar. Symptomatic gout may be induced. In surgical patients thiazides may reduce response to vasopressors and increase response to tubocurarine.

Adverse Reactions: Pargyline may be associated with orthostatic hypotension. Mild constipation, slight edema, dry mouth, sweating, increased appetite, arthralgia, nausea and vomiting, headache, insomnia, difficulty in micturition, nightmares, impotence, delayed ejaculation, rash, and purpura have been encountered with pargyline. Hyperexcitability, increased neuromuscular activity (muscle twitching) and other extrapyramidal symptoms have been reported in a few patients with reduced cardiac reserve.

During intensive or prolonged therapy, guard against hypochloremic alkalosis and hypokalemia (especially the latter if patient is on digitalis). Observe all patients for signs of hyponatremia ("low salt" syndrome).

Reported thiazide reactions also include anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, and pancreatitis. Nocturia has been observed with the combination.

709075R

ABBOTT



"All Registered Nurses are Alike"

It stands to reason. They all go through the same training; they all have to pass the same tests: they all have to measure up to the same standards. Therefore, all registered nurses are alike.

That's nonsense, of course. But it's no more nonsensical than what some people say about aspirin. Namely: since all aspirin is at least supposed to come up to certain required standards, then all aspirin tablets must be alike.

Bayer's standards are far more demanding. In fact, there are at least *nine specific differences* involving purity, potency and speed of tablet disintegration. These Bayer® standards result in significant product benefits including gentleness to the stomach, and product stability that enables Bayer tablets to *stay* strong and gentle until they are taken.

So next time you hear someone say that all aspirin tablets are alike, you can say, with confidence, that it just isn't so.

You might also say that all registered nurses aren't alike, either.





"George wants to know if it's okay to take his cold medicine now, Doctor, instead of seven o'clock?"



The long-continued action of Novahistine LP should help you both get a good night's sleep. Two tablets in the morning and two in the evening will usually provide round-the-clock relief by helping clear congested air passages for freer breathing. Novahistine LP also helps restore normal mucus secretion and ciliary activity—normal physiologic defenses against infection of the respiratory tract. Use cautiously in individuals with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution ambulatory patients that drowsiness may result. Each Novahistine LP tablet contains: phenylephrine hydrochloride, 25 mg., and chlorpheniramine maleate, 4 mg.

NOVAHISTINE® LP

DOW **PITMAN-MOORE** Division of The Dow Chemical Company, Indianapolis

A BLUE SHIELD REPORT to DOCTORS



REPORT # 7

Insure Prompt Claim Processing

In order to insure the prompt processing of claims, please take an extra minute to be sure the following information is shown:

1. Contract & group numbers
2. Dates of services
3. Physician's charge *not* the scheduled fee
4. Physician's signature
5. Subscriber's or spouse's signature

Recommend

With Over 800 Participating MDs

ASSOCIATED HOSPITAL SERVICE OF MAINE
509 FOREST AVENUE
PORTLAND, MAINE 04101

Night Leg Cramps . . . Unwelcome Bedfellow

In Diabetes[1], Arthritis[2], and Peripheral Vascular Disorders[2]



now . . . specific therapy for night leg cramps

Walker

QUINAMM™

Consistently effective, QUINAMM provided complete relief in 94% of 200 potients studied, mony of whom were severe coses refroctory to other medicotion.[3] Your prescription for one toblet ot bedtime often controls poinful night cramps with the initial dose . . . helps restore restful sleep.

THE NATIONAL DRUG COMPANY
DIVISION OF RICHARDSON MERRELL INC.
PHILADELPHIA, PENNSYLVANIA 19144

Prescribing Information: Composition: Each white, beveled, compressed tablet contains: Quinine Sulfate 260 mg. and Aminophylline 195 mg. **Contraindication:** QUINAMM is contraindicated in pregnancy because of its quinine content. **Precautions:** Aminophylline may produce intestinal cramps in some instances, and quinine may produce symptoms of cinchonism, such as tinnitus, dizziness, and gastrointestinal disturbance. Discontinue use if ringing in the ears, deafness, skin rash, or visual disturbances occur. **Dosage:** One tablet upon retiring. Where necessary, dosage may be increased to one tablet following the evening meal and one tablet upon retiring. **Supplied:** Bottles of 100 and 500 tablets.
References: 1. Shuman, C.: Am. J. Med. Sci., 225:54, 1953. 2. Perchuk, E., et al.: Angiology, 12:102, 1961. 3. Rawls, W., et al.: Med. Times, 87:818, 1959.
6/67 Q-706A

When the agitated geriatric disrupts the home...

His teen-age granddaughter won't invite friends home because of his outbursts.



for moderate to severe anxiety

Mellaril®
(thioridazine)
25 mg. t.i.d.

SANDOZ

His slovenly room and habits create more tension.

His disturbances at the table make every meal a nightmare.



His daughter can't please him. There is "just no living with him."

See following page for prescribing information.

When the agitated geriatric disrupts the home...

Anxiety that *seriously interferes* with the individual's performance at work, at home, or in the community may be regarded as *moderate to severe* in degree.

Mellaril often recommends itself to the treatment of moderate to severe anxiety because it

- helps control the most frequent symptoms: marked tension, agitation, apprehension, restlessness, hypermotility
- often alleviates anxiety-induced somatic complaints
- frequently helps strengthen emotional resources
- helps the patient maintain realistic contact with environment, closer harmony with family

Thus, when you consider the anxiety moderate to severe... consider Mellaril.

Contraindications: Severely depressed or comatose states from any cause, and in association with or following MAO inhibitors; severe hypertensive or hypotensive heart disease.

Precautions: Hypersensitivity reactions (e.g., leukopenia, agranulocytosis) and convulsive seizures are infrequent. Pigmentary retinopathy has been observed where doses in excess of those recommended were used for long periods of time. May potentiate central nervous system depressants, atropine, and phosphorus insecticides. Where complete mental alertness is required, administer the drug cautiously and increase dosage gradually. In addition, orthostatic hypotension (especially in female patients) has been observed. Epinephrine should be avoided in treatment of drug-induced hypotension.

Side Effects: Pseudoparkinsonism and other extrapyramidal disorders are infrequent; drowsiness, especially in high doses early in treatment, may occur; nocturnal confusion, dryness of the mouth, nasal stuffiness, headache, peripheral edema, lactation, galactorrhea, and inhibition of ejaculation are noted on occasion; photosensitivity and other allergic skin reactions may occur but are extremely rare.

Before prescribing, see package insert for full product information.

for moderate to severe anxiety

Mellaril®
(thioridazine)
25 mg. t.i.d.

SANDOZ

mudrane®

for

- EMPHYSEMA
- ASTHMA
- CHRONIC BRONCHITIS
- BRONCHIECTASIS

The fast-disintegrating uncoated tablet gives relief in 15 minutes

Each tablet contains:

Potassium Iodide	195 mg.
Aminophylline	130 mg.
Phenobarbital, Caution: May be habit forming...	21 mg.
Ephedrine HCl	16 mg.

FEDERAL LAW PROHIBITS
DISPENSING WITHOUT PRESCRIPTION

Precautions: Usual for aminophylline-ephedrine-phenobarbital. Iodides may cause nausea, long use may cause goiter. Discontinue if symptoms of iodism develop.

Iodide contraindications: tuberculosis, pregnancy.

DOSAGE

One tablet, with full glass of water, 3 or 4 times daily.

Dispensed in bottles of 100 and 1000 tablets.

MUDRANE GG—Formula, dosage and package identical to Mudrane—*except*—100 mg. glyceryl guaiacolate replaces the potassium iodide. The value of Mudrane cannot be enjoyed by a small group in which K.I. is contraindicated. Mudrane GG is prepared for this group.

MUDRANE GG ELIXIR—Four 5 cc teaspoonfuls is equivalent to one Mudrane GG tablet. Dosage adjusted to age and weight of child. Mudrane GG Elixir is for pediatric patients and those who think they cannot swallow tablets. Dispensed in pint and half gallon bottles.

WM. P. POYTHRESS & CO., INC.
RICHMOND, VIRGINIA 23217
Manufacturers of ethical pharmaceuticals since 1856



Diagnosis:

cystitis?
pyelonephritis?
pyelitis?
urethritis?
prostatitis?

in any case,
usually gram-negative*

Therapy:

two 500 mg. Caplets® q.i.d.
(initial adult dose)

...tions: Urinary tract infections caused by gram-negative and some gram-...e organisms.

...effects: Mainly mild, transient gastrointestinal disturbances; in ...ional instances, drowsiness, fatigue, pruritus, rash, urticaria, mild ...ophilia, reversible subjective visual disturbances (overbrightness of ... change in visual color perception, difficulty in focusing, decrease in ...acuity and double vision), and reversible photosensitivity reactions. ...d overdosage, coupled with certain predisposing factors, has produced ...onvulsions in a few patients.

...utions: As with all new drugs, blood and liver function tests are advis-...uring prolonged treatment. **Pending further experience, like most ...therapeutic agents, this drug should not be given in the first trimester ...gnancy. It must be used cautiously in patients with liver disease or ... impairment of kidney function.** Because photosensitivity reactions have ...ed in a small number of cases, patients should be cautioned to avoid ...essary exposure to direct sunlight while receiving NegGram, and if a ...on occurs, therapy should be discontinued. The dosage recommended ...ults and children should not arbitrarily be doubled unless under the ...l supervision of a physician. Bacterial resistance may develop.

...testing the urine for glucose in patients receiving NegGram, Clinistix® ...nt Strips or Tes-Tape® should be used since other reagents give a ...positive reaction.

...e: Adults: Four Gm. daily by mouth (2 Caplets® of 500 mg. four times ...for one to two weeks. Thereafter, if prolonged treatment is indicated, ...sage may be reduced to two Gm. daily. Children may be given ...ximately *25 mg. per pound* of body weight per day, administered in ...d doses. The dosage recommended above for adults and children ...t arbitrarily be doubled unless under the careful supervision of a ...ian. Until further experience is gained, infants under 1 month ...t be treated with the drug.

...upplied: Buff-colored, scored Caplets® of **500 mg. for adults,** conve-... available in bottles of 56 (sufficient for one full week of therapy) and in ...s of 1000. **250 mg. for children,** available in bottles of 56 and 1000.

...ences: (1) Based on 23 clinical papers, 1512 cases. Bibliography on ...st. (2) Bush, I. M., Orkin, L. A., and Winter, J. W., in Sylvester, J. C.: ...icrobial Agents and Chemotherapy—1964, Ann Arbor, American ...y for Microbiology, 1965, p. 722.

Winthrop

Winthrop Laboratories, New York, N. Y. 10016

NegGram®

Brand of

nalidixic acid

a specific anti-gram-negative

eradicates most urinary tract infections...

- Low incidence of untoward effects; no fungal overgrowth, crystalluria, ototoxic or nephrotoxic effects have been observed.
- "Excellent" or "good" response reported *in more than 2 out of 3* patients with either chronic or acute gram-negative infections.[1]

*As many as 9 out of 10 urinary tract infections are now caused by gram-negative organisms: E. coli, Klebsiella, Aerobacter, Proteus, Paracolon or Pseudomonas[2]. . . However, infections of the urethra and prostate caused by non-gonococcal gram-negative organisms are believed to be less prevalent.



Tears without grief

Crying Spells–psychic tension with depressive symptoms?
"I don't know what's the matter with me lately...I cry and I cry... and I really don't know why I do."

A woman often is not conscious of the real reasons for her crying spells or refuses to admit them to herself. On probing, you may find that frequent weeping, like insomnia or neurotic fatigue, often is an expression of psychic tension. She needs sympathy and reassurance, and perhaps a calming agent to help her over her crisis. Consider prescribing Valium (diazepam) for her. It usually reestablishes calmness promptly. Crying spells and other secondary depressive symptoms normally subside as the tension is relieved. Your patient then can cope more easily with stresses to which she is subjected. Valium (diazepam) is generally well tolerated, and on proper mainteenance dosage usually does not impair mental acuity or ability to function. If side effects such as ataxia and drowsiness occur, they usually disappear with dosage adjustment.

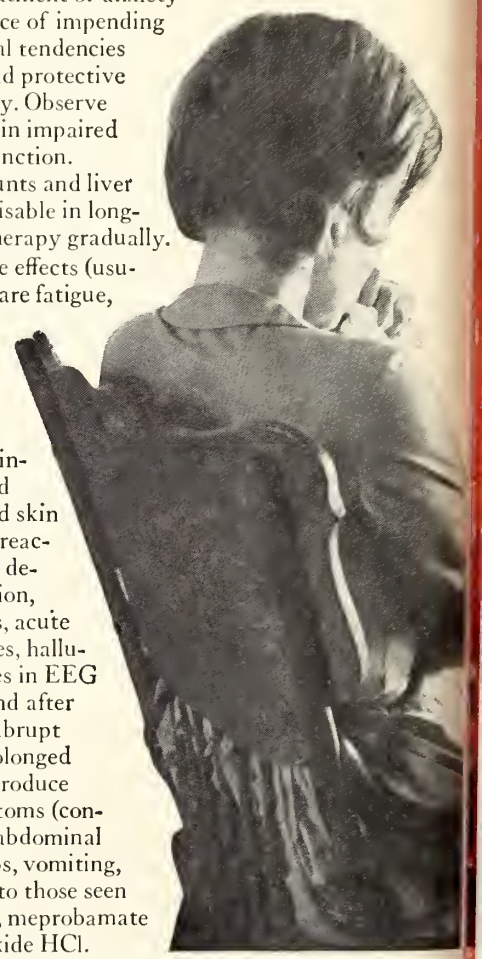


Before prescribing, please consult complete product information, a summary of which follows:

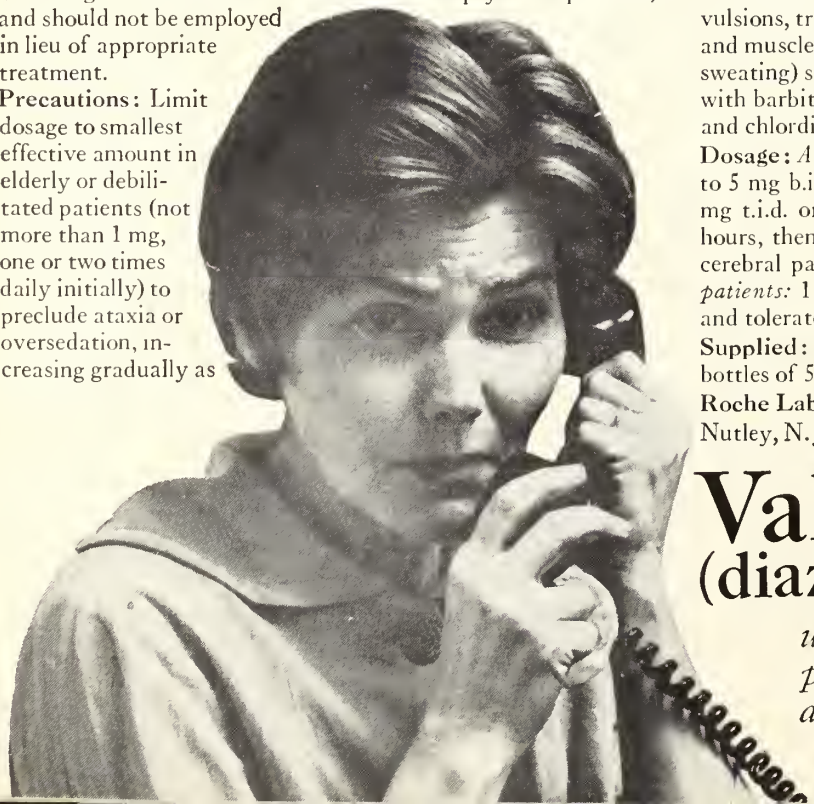
Contraindications: Infants, patients with history of convulsive disorders, glaucoma or known hypersensitivity to drug.

Warning: Not of value in the treatment of psychotic patients, and should not be employed in lieu of appropriate treatment.

Precautions: Limit dosage to smallest effective amount in elderly or debilitated patients (not more than 1 mg, one or two times daily initially) to preclude ataxia or oversedation, increasing gradually as needed or tolerated. As is true of all CNS-acting drugs, until correct maintenance dosage is established, advise patients against possibly hazardous procedures requiring complete mental alertness or physical coordination. Driving during therapy not recommended. In general, concurrent use with other psychotropic agents is not recommended. If such combination therapy is used, carefully consider individual pharmacologic effects–particularly with known compounds which may potentiate action of Valium (diazepam), such as phenothiazines, barbiturates, MAO inhibitors and other antidepressants. Advise patients against simultaneous ingestion of alcohol or other CNS depressants. Safe use in pregnancy not established. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Observe usual precautions in impaired renal or hepatic function. Periodic blood counts and liver function tests advisable in long-term use. Cease therapy gradually.



Side Effects: Side effects (usually dose-related) are fatigue, drowsiness and ataxia. Also reported: mild nausea, dizziness, blurred vision, diplopia, headache, incontinence, slurred speech, tremor and skin rash; paradoxical reactions (excitement, depression, stimulation, sleep disturbances, acute hyperexcited states, hallucinations); changes in EEG patterns during and after drug treatment. Abrupt cessation after prolonged overdosage may produce withdrawal symptoms (convulsions, tremor, abdominal and muscle cramps, vomiting, sweating) similar to those seen with barbiturates, meprobamate and chlordiazepoxide HCl.



Dosage: *Adults:* Mild to moderate psychoneurotic reactions, 2 to 5 mg b.i.d. or t.i.d.; severe psychoneurotic reactions, 5 to 10 mg t.i.d. or q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; muscle spasm with cerebral palsy or athetosis, 2 to 10 mg t.i.d. or q.i.d. *Geriatric patients:* 1 or 2 mg/day initially, increase gradually as needed and tolerated. (See Precautions.)

Supplied: Valium® (diazepam) Tablets, 2 mg, 5 mg and 10 mg bottles of 50 and 500.

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Valium® (diazepam) Roche®

useful for the relief of psychic tension with associated depressive symptoms

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The Maine Medical Association

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No untoward side effects have been reported to date.

Literature on indications and dosage available on request.

References:

(1) Siver, R. H.: CMD, *21*:109, September 1954. (2) Frykman, H. H.: Minn. Med., *38*:19-27, January 1955. (3) McGivney, J.: Tex. State Jour. Med., *51*:16-18, January 1955. (4) Quehl, T. M.: Jour. of Florida Acad. Gen. Prac., *15*:15-16, October 1965. (5) Weekes, D. J.: N.Y. State Jour. Med., *58*:2672-2673, August 1958. (6) Weekes, D. J.: EENT Digest, *25*:47-59, December 1963. (7) Abbott, P. L.: Jour. Oral Surg., Anes., & Hosp. Dental Serv., 310-312, July 1961. (8) Rapoport, L. and Levine, W. I.: Oral Surg., Oral Med. & Oral Path., *20*:591-593, November 1965.

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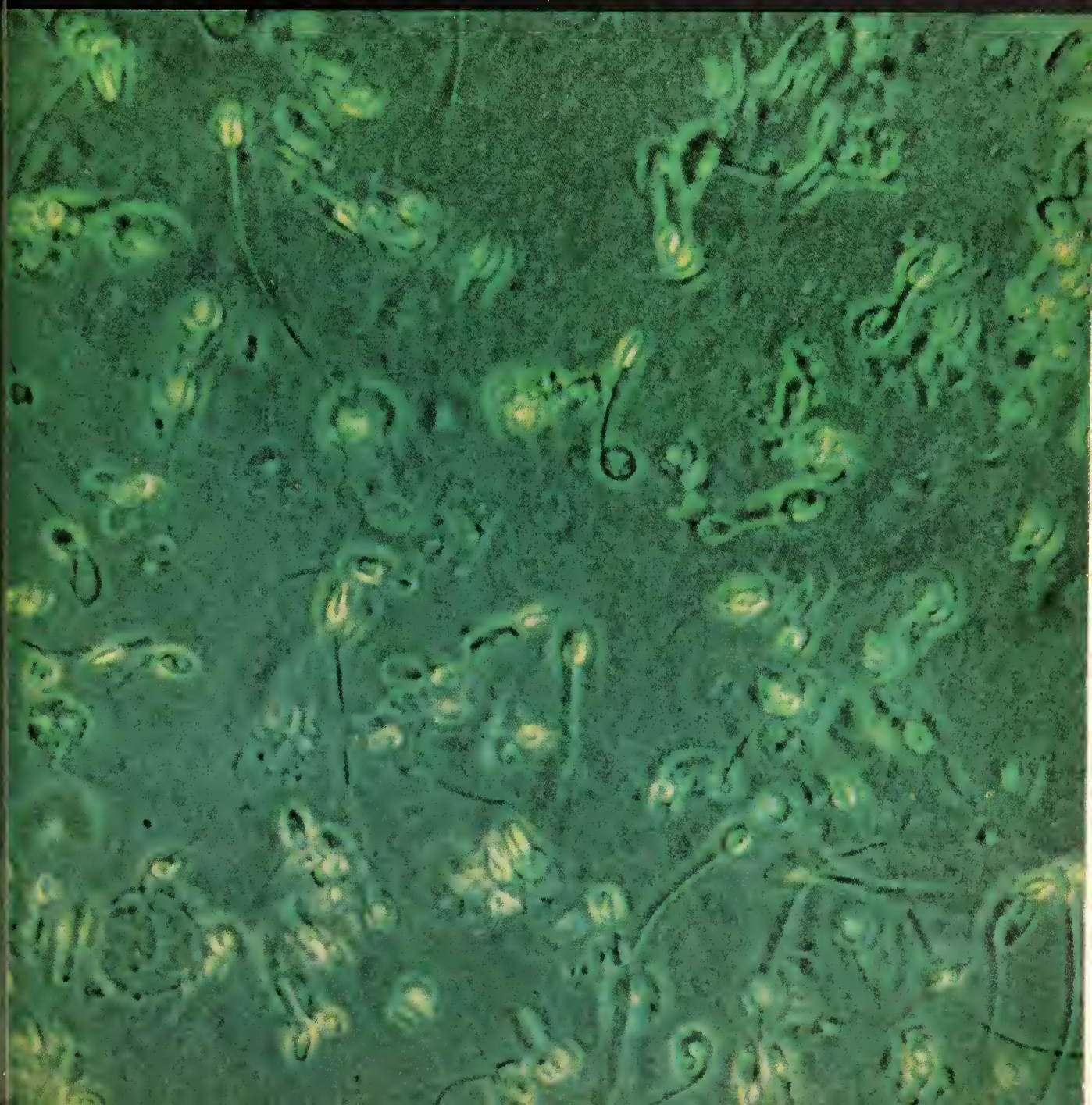
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When the talk turns to oral contraceptives, it makes medical sense to remember low-dose Norinyl®-1.

(norethindrone 1mg. & mestranol 0.05mg.)

Turn page for contraindications, precautions and side effects.



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Prescribing Information

Contraindications: Patients with any symptoms or history of thrombophlebitis, pulmonary embolism, liver dysfunction or disease, carcinoma of breast or genital organs, or undiagnosed vaginal bleeding.

Warnings: Discontinue medication pending examination if there is sudden partial or complete loss of vision, proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn. The safety of Norinyl-1 in pregnancy has not been demonstrated. If a patient misses two consecutive periods, pregnancy should be ruled out before continuing the medication. If she has not adhered to the prescribed schedule, pregnancy should be considered at the first missed period. Active ingredients of oral contraceptives have been detected in the milk of mothers who received these drugs; the significance to infants has not been determined.

Precautions: Pretreatment physical should include examination of the breasts and pelvic organs, as well as a Papanicolaou smear. If endocrine or liver function tests are abnormal during therapy, repeat tests are recommended after the drug has been withdrawn for two months. Following administration of drug, preexisting uterine fibromyomata may increase in size. Careful observation and caution are required for patients with symptoms or history of epilepsy, migraine, asthma, cardiac or renal dysfunction, cerebrovascular accident, psychic depression, and diabetes. In cases of undiagnosed vaginal bleeding, adequate diagnostic measures are indicated. Possible long-term effects of the drug on pituitary, ovarian, adrenal, hepatic or uterine function must await further studies. The physician should be alert to the earliest manifestations of thrombophlebitis and pulmonary embolism. The drug should be used judiciously in those young patients in whom bone growth is not complete. The age of the patient constitutes no absolute limiting factor, although treatment with Norinyl-1 may mask symptoms of the climacteric. The pathologist should be advised of Norinyl-1 therapy when relevant specimens are submitted.

Side Effects: The following have been observed with varying incidence in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms, breakthrough bleeding, spotting, change in menstrual flow, amenorrhea, edema, chloasma or melasma, breast changes (tenderness, enlargement and secretion), change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately postpartum, cholestatic jaundice, migraine, rash (allergic), rise in blood pressure in susceptible individuals, mental depression. Although the following side effects have been reported in users of oral contraceptives, no cause and effect relationship has been established: anovulation posttreatment, premenstruallike syndrome, changes in libido, changes in appetite, cystitislike syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption, and itching. The following occurrences have been observed in users of oral contraceptives (a cause and effect relationship has neither been established nor disproved): thrombophlebitis, pulmonary embolism, neuroocular lesions.

The following laboratory tests may be altered by the use of oral contraceptives: increased sulfobromophthalein and other hepatic function tests, coagulation tests (increase in prothrombin, factors VII, VIII, IX and X), thyroid function (increase in PBI and butanol extractable protein-bound iodine and decrease in T^3 values), metyrapone test, pregnanediol determination.

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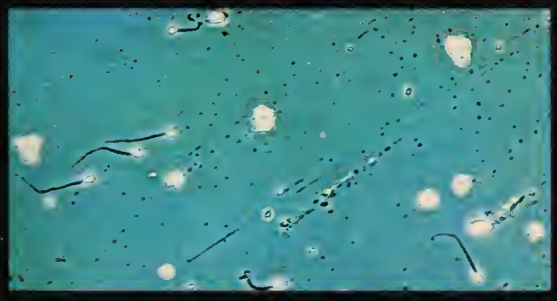
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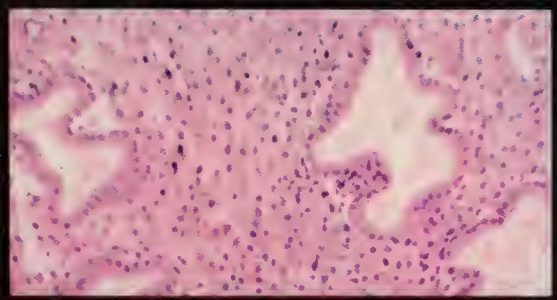
Untreated Patient



Cervical mucus at midcycle is usually thin and watery, with Spinnbarkeit (stretchability) of 15 to 20 cm.



Spermatozoa appear healthy, active, freemoving.

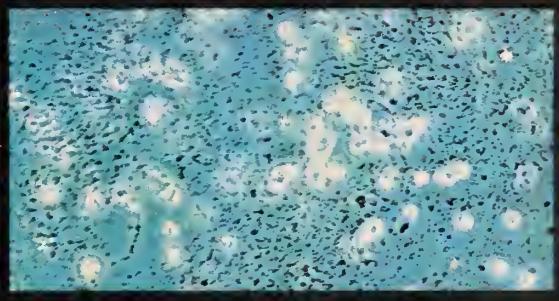


Endometrium of untreated patient is receptive to the fertilized ovum during secretory phase.

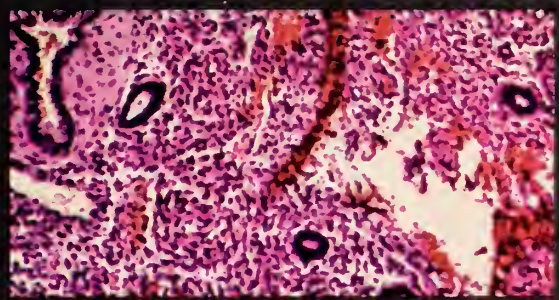
Norinyl-1 Patient



Cervical mucus at midcycle is scanty, viscous—with Spinnbarkeit of 1 cm. or less.



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Synalar®
fluocinolone acetonide





Turn page for contraindications, precautions and side effects.

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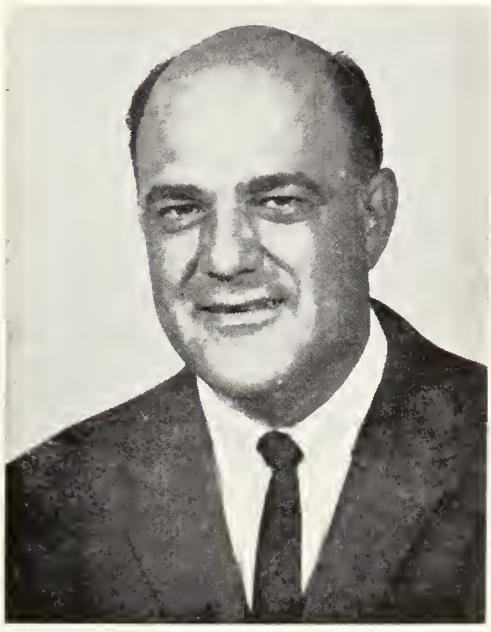
Contraindications: Tuberculous, fungal, and most viral lesions of the skin (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of the components. *Precautions:* Synalar preparations are virtually nonsensitizing and nonirritating. However, the solution may produce burning or stinging when applied to denuded or fissured areas. In some patients with dry lesions, the solution may increase dryness, scaling or itching. Where severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. *Side Effects:* Side effects are uncommon with topical corticosteroids. As with all drugs, however, a few patients may react unfavorably to Synalar under certain conditions. In such cases the agent should be discontinued and appropriate measures taken. *Availability:* Synalar (fluocinolone acetonide) Cream 0.025%—5, 15 and 60 Gm. tubes and 425 Gm. jars. Cream 0.01%—15, 45 and 60 Gm. tubes and 120 Gm. jars. Solution 0.01%—20 and 60 cc. plastic squeeze bottles. Ointment 0.025%—15 and 60 Gm. tubes. Neo-Synalar® (neomycin sulfate 0.5% [0.35% neomycin base], fluocinolone acetonide 0.025%) Cream—5, 15 and 60 Gm. tubes.

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Precautions: The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

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Once a day, every day

ENDURON®
METHYCLOTHIAZIDE



DAILY DOSAGE RANGE	Minimum	Usual	Intermediate	Maximum
	2.5 mg. tablet	5 mg. tablet	7.5 mg.	10 mg.

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DAILY DOSAGE RANGE	2.5 mg. methyclothiazide 0.25 mg. deserpidine	5 mg. methyclothiazide 0.5 mg. deserpidine	7.5 mg. methyclothiazide 0.75 mg. deserpidine	10 mg. methyclothiazide 1 mg. deserpidine

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Eutonyl is a unique nonhydrazine agent. It is reported to act by reducing peripheral vascular resistance.[1,2]

In clinical trials, significant reductions in mean blood pressure were seen in 84% of patients studied—all were moderate to severe cases. Eutonyl lowers diastolic in proportion to systolic, and in about half of the cases studied, reductions in the sitting and recumbent positions were nearly as great as in the standing position.

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Here, then, is a highly effective *basic treatment* for moderate to severe cases—and one that will not hamper your patient with lethargy or drowsiness while on treatment.

Once a day, every day

EUTONYL®
PARGYLINE HYDROCHLORIDE



DAILY DOSAGE RANGE	Minimum	Usual starting	Intermediate	Maximum
	10 mg. tablet	25 mg. tablet	50 mg. tablet or as needed	200 mg.

1. Brest, A. N., et al., Cardiac and Renal Hemodynamic Response to Pargyline, Ann. N. Y. Acad. Sci., 107-1016, 1963.
2. Winsor, T., Pargyline Hydrochloride, Hypertension, Urinary Tryptamine, and Vascular Reflexes, Geriatrics, 19:598, Aug., 1964.

See Brief Summary on final page of advertisement.

Eutron adds thiazide for enhanced therapy with milder side effects

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Only a 7/4 mm. span between standing and recumbent pressures in clinical trials—reduced chance of orthostatic hypotension

The combining of Eutonyl and Enduron in Eutron permits a significantly greater antihypertensive effect than with either agent used alone. This in turn may allow therapeutic success with lesser dosage—and correspondingly milder side effects.

A significant finding in clinical trials was the drug's action in lowering blood pressure to *nearly equal levels in all body positions.* Total average spread between standing and recumbent readings (after treatment) was only 7/4 mm. Hg.

Thus, in your moderate to severe cases, Eutron affords a usually smooth course of therapy, often with reduced likelihood of orthostatic effects. (The usual precautions against rising suddenly, of course, will always apply.) And, because of the thiazide component, Eutron may be used in the presence of congestive heart failure.





Once a day, every day

EUTRON™

PARGYLINE HYDROCHLORIDE 25 MG.
WITH METHYCLOTHIAZIDE 5 MG.

DAILY DOSAGE RANGE	Minimum	Usual starting	Intermediate	Maximum
	12.5 mg. pargyline hydrochloride and 2.5 mg. methyclothiazide	25 mg. pargyline hydrochloride and 5 mg. methyclothiazide	37.5 mg. pargyline hydrochloride and 7.5 mg. methyclothiazide	50 mg. pargyline hydrochloride and 10 mg. methyclothiazide

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707075-R

ENDURON | ENDURONYL

METHYCLOTHIAZIDE

Each tablet contains
Methyclothiazide 5 mg. with
Deserpidine 0.25 mg. or 0.5 mg.

Indications: Enduron is used to control edema and mild to moderate hypertension; also used with other drugs for hypertension. Enduronyl is used in mild to moderately severe hypertension; when used with Enduronyl, more potent agents can be given at reduced dosage to minimize undesirable side effects.

Contraindications: Neither Enduron nor Enduronyl should be used in severe renal disease (except nephrosis) or shutdown; in severe hepatic disease or impending hepatic coma; in patients sensitive to thiazides. Hepatic coma has been reported as a result of hypokalemia in patients receiving thiazides.

Enduronyl is contraindicated in patients with severe mental depression and suicidal tendencies, active peptic ulcer, or ulcerative colitis.

Warnings: Consider possible sensitivity reactions in patients with a history of allergy or asthma. If added potassium intake is indicated, dietary supplementation is recommended. Enteric-coated potassium tablets should be reserved for cautious use only when adequate dietary supplementation is not practical because those tablets may induce serious or fatal small bowel lesions consisting of stenosis with or without ulceration. These small bowel lesions have caused obstruction, hemorrhage and perforation frequently requiring surgery. Medication should be discontinued immediately if abdominal pain, distension, nausea, vomiting or GI bleeding occurs.

Precautions: Use thiazides with caution in severe renal dysfunction, impaired hepatic function, or progressive liver disease. In surgical patients, thiazides may reduce the response to vasopressors and increase the response to tubocurarine. Use thiazides with caution in pregnancy (bone marrow depression, thrombocytopenia, or altered carbohydrate metabolism have been reported in certain newborn infants). Also reported have been: blood dyscrasias including thrombocytopenia with purpura, agranulocytosis and aplastic anemia; elevations of BUN, serum uric acid, or blood sugar. Symptomatic gout may be induced. Antihypertensive response may be enhanced following sympathectomy.

Use Enduronyl with caution in patients with a history of peptic ulcer, as rauwolfias may increase gastric secretion. Discontinue at the first sign of mental depression. Rauwolfia alkaloids may increase hypotensive effects of surgery or anesthesia, and should be discontinued two weeks prior. They also lower the convulsive threshold and shorten seizure latency. In epilepsy, dosage adjustment of anticonvulsant medication may be necessary. Alcohol, barbiturates, or narcotics may potentiate action of deserpidine.

Adverse Reactions: During intensive or prolonged therapy, guard against hypochloremic alkalosis and hypokalemia (especially the latter if patient is on digitalis). All patients should be observed for signs of hyponatremia ("low-salt" syndrome). Reported thiazide reactions include: anorexia, nausea, vomiting, diarrhea, headache, skin rash, dizziness, paresthesia, weakness, photosensitivity, jaundice, and pancreatitis.

Reported rauwolfia reactions include: nasal stuffiness, nausea, weight gain, diarrhea, aggravation of peptic ulcer, epistaxis, skin eruption, and reduction of libido and potency. Excessive drowsiness, fatigue, weakness, and nightmares may signal early signs of mental depression.

EUTONYL® | EUTRON™

PARGYLINE HYDROCHLORIDE

Each tablet contains
Pargyline Hydrochloride 25 mg.
with Methyclothiazide 5 mg.

Indications: For treatment of patients with moderate to severe hypertension, especially those with severe diastolic hypertension. Not recommended for patients with mild or labile hypertension amenable to therapy with sedatives and/or thiazide diuretics alone. It is desirable to establish the dosage of Eutron by administering component drugs separately.

TM-Trademark.

Contraindications: Pheochromocytoma, advanced renal disease, increasing renal dysfunction, paranoid schizophrenia and hyperthyroidism. Hepatic coma has been reported as consequence of hypokalemia with thiazide therapy. Until further experience is gained not recommended for patients with malignant hypertension, children under 12, or pregnant patients.

Concomitant use of the following is contraindicated: other monoamine oxidase inhibitors; parenteral forms of reserpine or guanethidine; sympathomimetic drugs; foods high in tyramine such as cheese; imipramine and amitriptyline, or similar antidepressants; methyldopa. 2 week interval should separate therapy and use of these agents.

Methyclothiazide is contraindicated in patients with known sensitivity to thiazides.

Warnings: Pargyline hydrochloride is a monoamine oxidase inhibitor. Warn patients against eating cheese, and using alcohol, proprietary drugs or other medication without the knowledge of the physician. When indicated, alcohol, narcotics (meperidine should be avoided), antihistamines, barbiturates, chloral hydrate, and other hypnotics, sedatives, tranquilizers, or caffeine, may be used cautiously in reduced dosage. In emergency surgery ¼ to ⅓ the usual dose of narcotics, analgesics, and other premedications should be used avoiding parenteral administration where possible. Carefully adjust dose of anesthetics to response of patient. Withdraw pargyline two weeks before elective surgery.

Warn patients about the possibility of postural hypotension. Those with angina or coronary artery disease should not increase physical activity with an improvement in well being. Pargyline may lower blood sugar.

Avoid use of enteric-coated potassium tablets, as these may induce serious or fatal small-bowel lesions consisting of stenosis with or without ulceration. These small-bowel lesions have caused obstruction, hemorrhage and perforation frequently requiring surgery. Medication should be discontinued immediately if abdominal pain, distension, nausea, vomiting or GI bleeding occurs. These products contain no added potassium salts and if added potassium intake is desired, dietary supplementation is recommended. Coated potassium tablets should be reserved for cautious use when adequate dietary supplementation is impractical. In patients with a history of allergy or asthma the possibility of sensitivity reactions should be considered.

Precautions: Measure blood pressure while patient is standing to determine antihypertensive effect. Use with caution in hyperactive or hyperexcitable persons. Such persons may show increased restlessness and agitation. Withdraw drug during acute febrile illness. Watch patients with impaired renal function for increasing drug effects or elevation of BUN and other evidence of progressive renal failure; withdraw drug if such alterations persist and progress. Use with caution in patients with liver disease. As with all new drugs, complete blood counts, urinalyses, and liver function tests should be performed periodically. With prolonged therapy, examine patients for change in color perception, visual fields and fundi. Also reported have been: blood dyscrasias including thrombocytopenia with purpura, agranulocytosis and aplastic anemia; elevations of BUN, serum uric acid, or blood sugar. Symptomatic gout may be induced. In surgical patients thiazides may reduce response to vasopressors and increase response to tubocurarine.

Adverse Reactions: Pargyline may be associated with orthostatic hypotension. Mild constipation, slight edema, dry mouth, sweating, increased appetite, arthralgia, nausea and vomiting, headache, insomnia, difficulty in micturition, nightmares, impotence, delayed ejaculation, rash, and purpura have been encountered with pargyline. Hyperexcitability, increased neuromuscular activity (muscle twitching) and other extrapyramidal symptoms have been reported in a few patients with reduced cardiac reserve.

During intensive or prolonged therapy, guard against hypochloremic alkalosis and hypokalemia (especially the latter if patient is on digitalis). Observe all patients for signs of hyponatremia ("low salt" syndrome).

Reported thiazide reactions also include anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, and pancreatitis. Nocturia has been observed with the combination.



709075R



Unique Nitrospan micro-dialysis process* adds an important dimension–TIME–to nitroglycerin therapy

elps decrease frequency and severity of attacks; often ncreases exercise tolerance. Decreases need for sub-ngual nitroglycerin, increases patient confidence. mooth, continuous release independent of gastrointes-nal functions reduces headache and other side effects hat might result from peak concentrations of tablet or ntermittent-release preparations.

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*__The micro-dialysis cell.__ Nitrospan's timed-release mechanism is different from those usually employed in sustained-action capsules, which rely on unpredictable digestive processes. The nitroglycerin in Nitrospan capsules is contained within hundreds of dialysis cells of controlled permeability. The contents of each micro-dialysis cell are released by diffusion rather than disintegration, at a continuous rate independent of gastrointestinal action. Only the presence of fluid is required.



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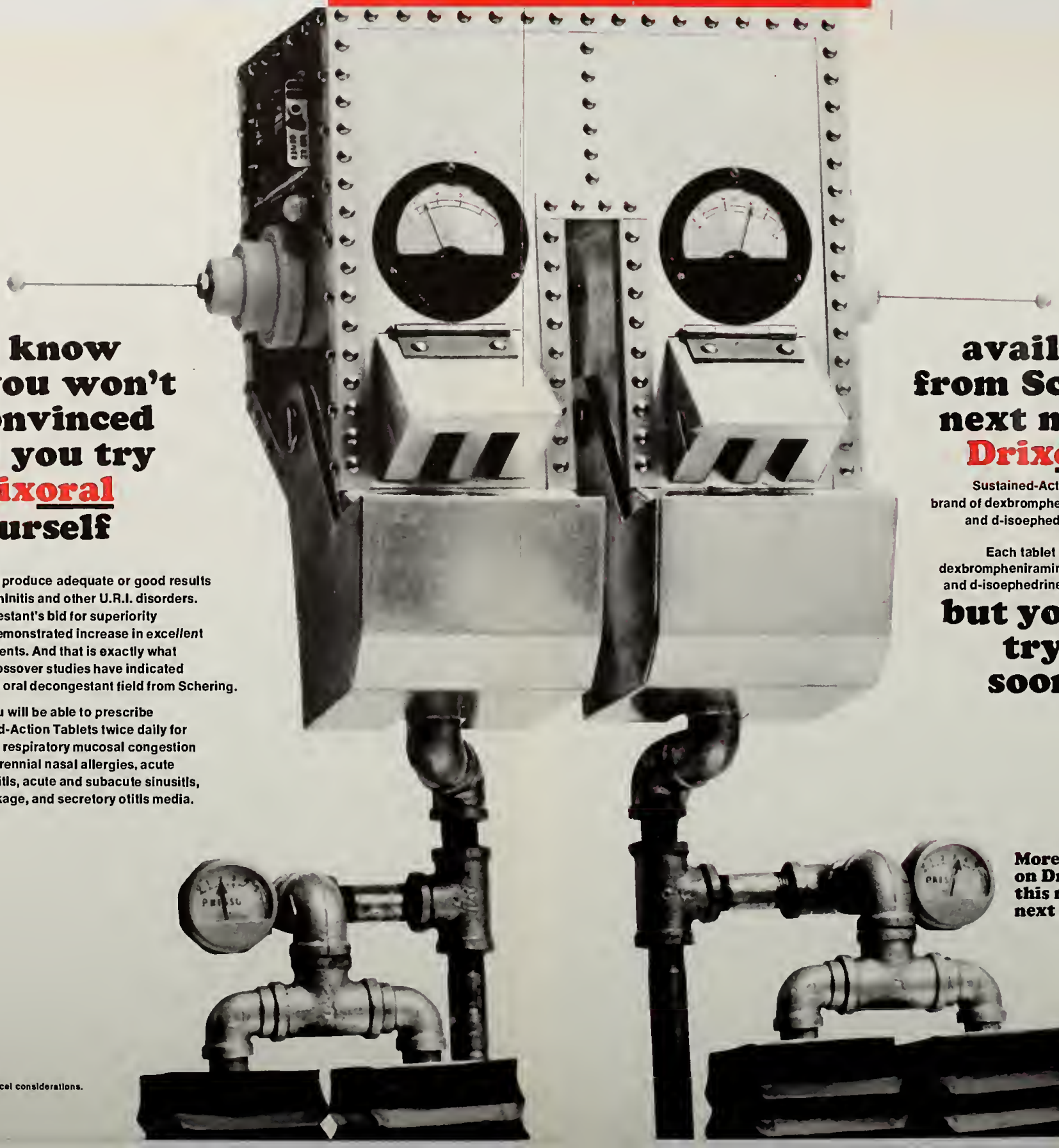
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and d-isoephedrine sulfate

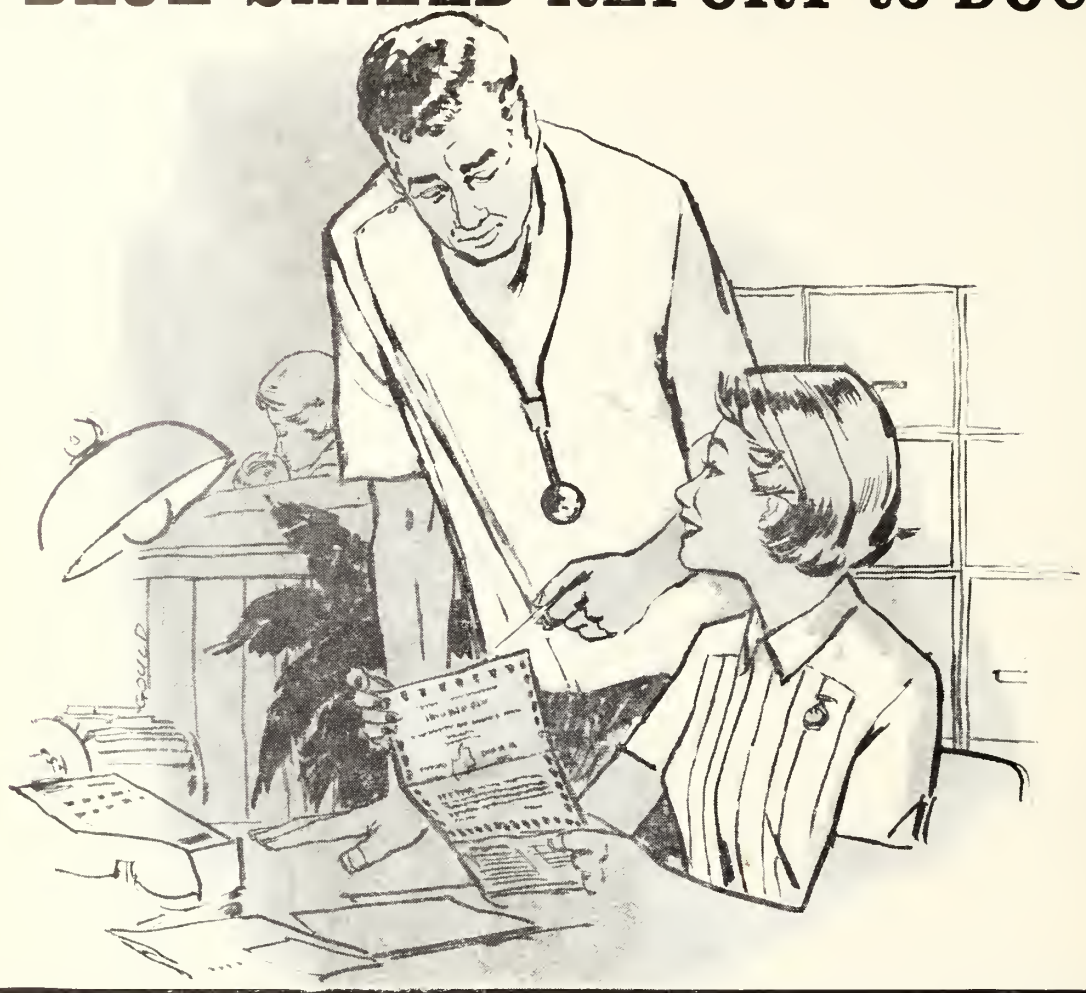
Each tablet contains
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and d-isoephedrine sulfate 120 mg.

but you can try it sooner

More details on Drixoral and this mechanical man next month.

See last page of advertisement for clinical considerations.

A BLUE SHIELD REPORT to DOCTORS



REPORT # 8

CHAMPUS On Prevailing Fee Basis

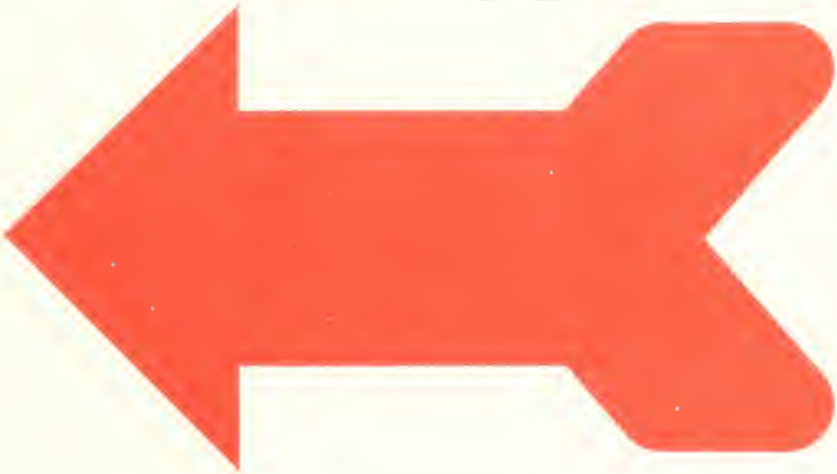
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Sustained-Action Tablets
brand of dexbrompheniramine maleate
and d-isoephedrine sulfate

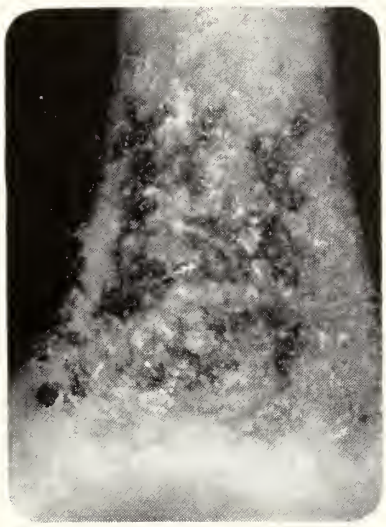
Each tablet contains dexbrompheniramine maleate 6 mg., and d-isoephedrine sulfate 120 mg.

Clinical considerations: Contraindications—DRIXORAL should not be given to children under 12 years of age. Until animal studies support the safety of this preparation for use during gestation, DRIXORAL should not be administered to pregnant women. *Precautions*—Although isoephedrine causes practically no pressor effect in normotensive individuals, it should be used with caution in patients with hypertension, coronary artery disease and hyperthyroidism. Dexbrompheniramine maleate may cause infrequent and usually mild drowsiness; should this occur, the patient should not engage in mechanical operations that require alertness. *Side effects*—Mild drowsiness has been observed in occasional patients receiving DRIXORAL. Although very infrequent complaints suggestive of sympathomimetic side effects have been noted, possible side effects of sympathomimetic origin include anxiety, tension, restlessness, nervousness, tremor, weakness, insomnia, headache, palpitation, tachycardia, angina, elevation of blood pressure, sweating, mydriasis, anorexia, nausea, vomiting, dizziness, constipation, and dysuria due to vesical sphincter spasm. For more complete details, consult package insert or Schering literature available from your Schering Representative or Medical Services Department, Union, New Jersey 07083.

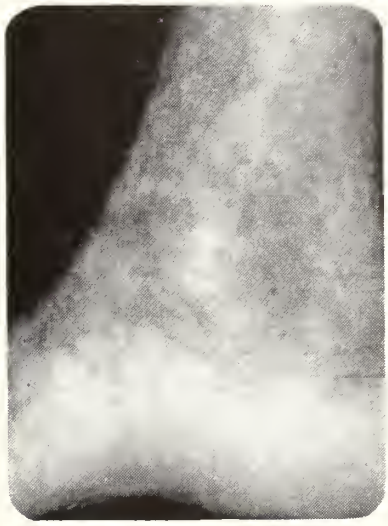
References:
1. Pullen, F. W. 2nd, and Montgomery, W. W.: Arch. Otolaryng. 77:24, 1963.
2. Frank, D. I.: Curr. Therap. Res. 6:158, 1964.
3. Fierberg, A. A.: Ann. Allergy 22:324, 1964.

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The Journal
of the
Maine Medical Association

Volume Fifty-Eight | Brunswick, Maine, November, 1967 | No. 11

Parathyroid Function Studies In Mentally Retarded Children With Convulsions*

Erlinda C. Roldan, M.D.**

Convulsions have always puzzled both lay persons and students of medical science and have been responsible for a great amount of research work. Controversy about its etiology has raged for a long time in the past and at present despite recent advances in the understanding of this subject, workers in this field could still not definitely boast of a cure, even with the innumerable drugs at their command.

No more hopeless and depressing a situation could beset the parents and perhaps the physician, too, to find out that the child besides being mentally retarded has convulsions as well. The importance of seizures as a cause of further deterioration of the intellect is being hailed with more recognition at the present time and there are also scattered reports incriminating seizures as cause of death. With these problems in mind, the clinician should make an attempt to find the explanation for the variability in the response of patients to therapy – why one responds while the other does not. Are there some inaccuracies in the diagnosis or is there some other factor that has not been discovered?

During the past few years, emphasis has been placed on a well-known but perplexing problem — that of parathyroid insufficiency. Case reports abounding in the literature have suggested the association between convulsions and hypoparathyroidism, idiopathic or postoperative and many investigations have demonstrated that it is not a mere association but that a low serum calcium concentration could induce a seizure in a person already predisposed to epilepsy.[1] They have attempted to elucidate biochemical and physiological mechanisms by which hypoparathyroidism could provoke a true seizure besides the commonly known manifestation of hypocalcemic "tetany." It is not within the scope of this paper to discuss such biochemical and physiological mechanisms. It would be worth noting in passing that very often, patients with seizures are treated for years with one or more anticonvulsants before the metabolic cause is unravelled; many present an array of symptoms and signs so bizarre that the true diagnosis remains unsuspected for long periods.

The purpose of this communication is to present the results of studies done to determine the presence of parathyroid hypofunction in mental retardates with convulsions. We had no definite clinical reasons to think that these patients had an uncommon endocrinopathy. However, the study was undertaken because a high proportion of the previously reported cases were not suspected clinically either. Some patients in our study group did not respond to adequate doses of drugs. Because of this, plus the well-known response of hypoparathyroidism to a specific treatment, it was deemed worthwhile to go on with the study.

Materials and Methods

Seventy-seven children (35 males and 42 females) ages ranging from 6-16 years, institutionalized at Pineland Hospital and Training Center (the only institution for the retarded in the State of Maine) were included in the study. Seventy-five patients were white, 1 was colored and 1 was an American Indian.

Of the 77 patients, 2 were of borderline intelligence (IQ 70-84), 5 were in the mild range (IQ 55-69), 13 in moderate range (IQ 40-54), 40 were severely retarded (IQ 25-39) and

*From the Department of Research, Pineland Hospital and Training Center, Pownal, Maine 04069 (Peter W. Bowman, M.D., Director).

**Director, Pediatric Service, Pineland Hospital and Training Center, Pownal, Maine 04069.

TABLE 1

ETIOLOGIC FACTORS (PATTERNED AFTER AAMD CLASSIFICATION, 1961)[7]

Factor Involved	*M*	*F*
Unknown		
With Structural Reaction Manifest	2	9
With Functional Reaction Manifest	2	1
Prenatal Factors	7	4
Prenatal Factors and Birth Injury	7	2
Birth Injury	5	8
Post-Natal Factors		
Infections	4	5
Injury	0	1
Electrolyte Imbalance	1	0
Repeated Seizures	1	0
Cranial and Intracranial Abnormalities	6	4
Disorder of Metabolism		
Galactosemia	1	1
Genetically Determined	1	0
Cultural-Familial	1	0
Chromosomal Aberration		
Down's Syndrome	0	1
Environmental Deprivation	2	1
	40	37
Total	77	

17 were considered profound (IQ 0-24) (based on the AAMD rating).

All available case records were reviewed. The following data were obtained – etiologic factors involved in the retardation and/or convulsion; the associated physical handicaps, type of seizure, age of onset, severity, frequency and/or severity of the attack, medications, electroencephalographic tracings and skull x-rays.

Blood was drawn from the 77 children in the fasting state and chemicals tests for calcium, total proteins (taken in conjunction with calcium levels), phosphorus, alkaline phosphatase and magnesium were performed in either fresh or quick frozen serum. Calcium was determined by the modification of Wallach et al fluorometric method.[2] Phosphorus was determined using the method of Fiske and Subbarow;[3] alkaline phosphatase by the method of Bessey, Lowry and Brock.[4] Magnesium levels though not a real test for parathyroid function were also obtained because the manifestations of hypomagnesemia could mimic that of calcium deficiency. The method of Schachter was used.[5] Total proteins, using the Biuret method of Kingsley[6] was determined in conjunction with calcium values.

The chemical analyses were done by only one person and under the same standards and conditions.

RESULTS

The etiologic factors responsible for the retardation are shown in Table 1.

Aside from the convulsive seizures, varied physical handicaps were present. Table 2 shows the type of physical handicap among the 77 patients in this study.

As shown in the Table 2, most patients had more than one physical handicap. Minor abnormalities like meatal stenosis, undescended testicles, etc. were not included.

Type of Seizure – Table 3 shows the type of convulsions. As will be noted, some patients had more than one type. Grand mal has the greatest incidence. The exact type of seizure is a very hard thing to determine. Usually the information is obtained from the parents, in most cases the mother, who often times is unable to make any differentiation between the different minor motor seizures and the other uncommon forms. The layman could very well recognize a grand mal attack; some would be able to recognize even a petit mal, though the latter is usually confused with myoclonic jerks or psychomotor attacks. In our study group, the type of seizure was obtained from the history of the social worker and/or the admitting physician, from the report of the referring agency or physician

TABLE 2

ASSOCIATED PHYSICAL HANDICAPS

	M	*F*
Motor disability alone (Spasticity, athetosis, etc.)	0	1
Eye Defects Alone	0	0
Hearing Impairment Alone	0	0
Speech Impairment Alone	7	3
Skeletal Abnormalities Alone (Incl. Cranial Anomalies)	4	0
Skin Abnormalities (Large Hemangioma)	1	0
Combined Motor Disability & Speech Impairment	4	5
Combined Motor Disability, Speech Impairment & Skeletal Abnormalities	5	5
Combined Motor Disability & Eye Defects	1	4
Combined Hearing & Speech Impairment	2	1
Combined Speech & Eye Defect	3	5
Combined Speech Impairment & Skeletal Abnormalities	3	1
Combined Eye Defects & Skeletal Abnormalities	1	0
Combined Motor Disability, Speech Impairment, Eye & Skeletal Defects	4	3
Combined Speech & Hearing Impairment & Eye Defects	1	0
Combined Motor Disability, Skeletal Abnormalities & Speech & Hearing Impairment	0	2
Combined Motor Disability, Speech Impairment & Eye Defects	2	3
No Abnormalities Recorded	2	4
	40	37
Total	77	

TABLE 3

TYPE OF SEIZURE

	M	*F*
Grand Mal alone	26	18
Petit Mal alone	2	1
Combined Grand Mal and Petit Mal	4	6
Infantile Spasms	1	0
Myoclonic Seizures	1	4
Psychomotor	0	1
Petit Mal & Myoclonic Jerks	1	0
Grand Mal, Petit Mal & Akinetic	0	1
Grand Mal & Myoclonic	1	1
Petit Mal Variant	1	0
Non Specific	4	4
	41	36
	77	

TABLE 4

AGE OF ONSET OF SEIZURES

Approximate Age of Onset	*M*	*F*
Infancy	25	21
PreSchool Age	12	10
Later than pre-school age	4	1
Not Specified	1	3
	42	35
Total	77	

who might have observed a typical attack in his office or while on a house call, from the description of the building personnel and some from the interpretation of the EEG tracing.

Age of onset of seizures – Table 4 shows the age of onset. This again is an objective thing. What may be a seizure to one mother may not be to the father or to a neighbor or even to the physician. A black-out spell or a terrible temper tantrum with breath holding may be interpreted by the nervous mother as an attack.

TABLE 5

EEG TRACINGS

	M	*F*
Very abnormal tracing	18	13
Moderately abnormal	8	7
Mildly abnormal	4	4
Borderline	7	4
Normal	5	5
	42	33
Total	75	

TABLE 6

BLOOD LEVELS OF CALCIUM, PROTEINS (TOTAL), PHOSPHORUS, ALKALINE PHOSPHATASE AND MAGNESIUM

Case No.	*Sex*	*Age*	*Calcium Mgs.%*	*Total Proteins (Gms.)*	*Phosphorus (Mgs.%)*	*Alkaline Phosphatase (Sigma Units)*	*Magnesium (Mgs.%)*
1	M	12	9.6	7.2	4.4	9.8	2.3
2	M	9	9.6	8.0	4.2	5.4	1.8
3	F	9½	9.6	7.6	4.4	8.0	2.2
4	M	12½	9.2	7.4	4.3	9.4	1.9
5	M	8½	9.2	7.0	4.0	10.0	2.4
6	M	8½	9.6	6.9	3.6	8.4	2.1
7	M	9	9.6	7.9	3.8	6.9	1.9
8	F	11	9.6	7.6	4.4	4.2	2.1
9	M	8	8.8	7.6	4.0	4.3	2.6
10	M	7½	10.0	7.0	3.8	7.2	2.6
11	M	12½	9.6	7.2	2.8	9.2	2.8
12	M	15	8.8	7.8	3.0	7.6	2.2
13	M	11	8.8	7.4	3.1	10.8	1.9
14	M	12	10.0	8.2	2.7	4.4	2.6
15	M	13	8.8	7.6	3.1	7.0	2.8
16	M	12	10.0	8.0	3.3	10.4	2.3
17	M	12	9.4	7.4	3.3	11.7	2.6
18	M	12	8.8	8.2	3.6	9.8	2.8
19	M	15½	9.6	7.6	2.7	6.2	2.4
20	M	6½	9.4	7.0	3.5	6.5	2.2
21	M	7½	9.8	7.9	4.2	5.2	2.1
22	F	11½	9.6	6.6	4.4	8.5	2.1
23	F	13	9.6	7.4	3.5	4.9	1.8
24	M	12	10.0	7.4	4.0	7.0	2.1
25	F	11	10.4	7.2	3.8	8.5	2.1
26	M	10	10.4	7.5	4.2	9.0	2.0
27	M	13	9.8	7.4	3.8	9.0	2.1
28	M	15	9.1	7.0	4.5	9.4	2.0
29	F	15½	9.7	7.6	3.3	3.1	2.8
30	F	9	8.9	7.4	3.5	6.2	1.9
31	F	9	9.7	7.8	4.5	8.0	2.4
32	F	14½	9.8	8.0	3.6	11.4	2.1
33	F	9½	9.3	6.8	3.6	6.7	2.2
34	M	14½	9.8	7.6	3.8	7.4	1.8
35	M	16	9.8	8.5	3.8	7.7	2.1
36	F	12	10.2	7.9	3.5	2.8	2.3
37	M	15	9.1	7.6	4.4	8.0	2.4
38	F	10	9.5	7.6	3.8	8.0	2.2
39	M	8½	8.6	7.4	3.1	6.0	2.3
40	F	15	9.5	7.4	3.8	3.2	2.3
41	F	14½	8.4	7.0	2.7	3.8	2.3
42	F	11	9.1	7.5	2.2	9.4	2.6
43	F	14½	9.1	7.3	3.7	3.3	2.8
44	F	13	8.9	7.8	3.5	6.0	2.3
45	M	13	8.0	7.7	7.2*	7.7	2.0
46	M	11	9.2	6.6	3.1	5.2	2.4
47	M	12½	10.0	7.0	4.2	3.1	2.1
48	M	13	9.2	7.4	4.5	6.5	2.4
49	M	10	9.5	7.6	4.0	4.5	2.1
50	M	9	9.5	7.9	2.8	9.5	2.1
51	F	11	9.2	7.2	3.6	7.0	2.2
52	M	8½	10.0	7.4	3.6	6.6	2.0
53	M	11	8.4	6.6	5.9	4.9	1.9
54	M	12	10.0	7.6	4.4	9.5	2.1
55	M	15½	10.4	7.9	3.0	10.1	2.1
56	M	14	9.5	6.8	3.5	5.4	2.2
57	F	11	10.1	6.8	3.1	6.9	2.2
58	F	9½	9.8	7.2	2.8	7.9	2.1
59	F	15	9.6	7.9	2.5	4.9	2.0
60	F	12	9.8	7.0	3.6	8.4	2.1
61	F	14½	10.0	7.4	3.6	7.6	2.1
62	F	13	10.1	7.2	3.5	9.6	2.4
63	F	15½	10.1	7.3	2.8	3.3	2.1
64	F	13	10.0	7.0	3.5	6.2	2.3
65	F	14	9.7	7.1	3.4	3.6	2.2
66	F	16	9.7	7.4	2.8	2.9	1.9
67	F	14	9.9	7.0	2.8	2.4	2.1
68	F	13½	9.4	6.4	2.8	4.5	2.2
69	F	15½	9.5	6.9	3.3	2.6	2.3
70	F	14½	9.9	7.7	2.8	5.1	2.5
71	F	16	9.4	7.7	3.3	3.4	2.4
72	F	11½	9.8	8.5	3.8	5.4	2.0
73	M	14	10.1	8.5	3.6	5.2	2.2
74	F	15	10.1	6.8	2.8	2.2	2.2
75	M	11	10.1	7.4	4.1	4.1	2.1
76	M	16	8.7	7.2	4.0	3.7	1.9
77	M	13	9.17	7.2	4.0	3.8	2.0
Range			9-10	6.9-7.9	2.8-4.4	4-9	1.9-8.5
Mean			9.5	7.4	3.6	6.5	2.21
I.S.D.			±0.5	±0.5	±.74	±2.5	±.25
Published Normal Values			9-11	6-8	2.2-4.4	2.8-6.7	2.1-2.6

*slightly hemolyzed

Frequency of Seizures – The frequency of seizures before admission to Pineland Hospital and Training Center could not be ascertained in most patients and even at this institution only an approximation could be arrived at by the Building personnel. A patient may have an unrecorded seizure during the day while at school, at work or attending paramedical clinics. This is more frequent with the minor motor seizures and other rare forms. At sleep, a patient could even have a grand mal seizure without being noticed by the night attendants.

Nineteen out of our 77 cases had no record of seizures since admission. Four patients were reported to have had seizures during home visits. It is possible that the mother may not have given the medication faithfully or there might have been an emotional factor that could have triggered the attack.

Five cases have had frequent episodes on certain months of the year despite adequate medication. Four had approximately 2 seizures a month and the rest only sporadically.

Anticonvulsant medications – At the time of the drawing of blood specimens, 21 of the 77 patients were not on medication. The other patients were on adequate doses of either Dilantin® alone, phenobarbital alone or a combination of the

two, Mysoline® alone or with Dilantin, Tridione® alone or with phenobarbital, Zarontin® alone or with phenabarbital.

Electroencephalograms – 75 out of 77 had EEG tracings taken shortly after admission. The results noted down according to the degree of tracing abnormality are shown in Table 5. The 5 patients mentioned earlier having frequent seizures despite adequate medication had very abnormal tracings.

Skull x-rays – 69 patients had skull x-rays taken shortly after admission or sometime during the institutionalization. Forty-three showed nothing of significance in the skull and 26 showed some abnormalities in the bones of the calvarium or intracranially. Not one of the 26 who had abnormal skull x-rays showed any intracranial calcifications.

Results of chemical analysis of blood specimens – The blood levels of calcium, total protein, phosphorus, alkaline phosphatase and magnesium are recorded in Table 6. Shown also are the range, mean, standard deviation and published normal values for each item analyzed.

Calcium Levels – 55 cases or 72% were within the normal range of 9-11 mg.%; 12 cases or 15% and 10 cases or 13% were below and above the range, respectively. Of the 12 cases below the range, 9 cases were 1 S.D. and 3 were 2 S.D. below. The values of the 10 cases above the range still were within limits of the published normal.

Total Proteins – This was determined in conjunction with serum calcium. The concentration of serum proteins influences the level of calcium in serum because part of the calcium is associated or bound to proteins. Of the 77 cases, 61 or 85% were within the range (6.9-7.9 Gms.) 8 cases were below the range but still within the limits of the published normal values. Eight cases fell above the range; 5 cases were 1 S.D. and 3 were 2 S.D. above the upper limit.

Phosphorus Levels – 67 cases or 88% were within the range of 2.8 – 4.4 mg.%. Five cases or 6% were below and 5 cases or 6% were above the range of the latter, 3 cases were 1 S.D., 1 was 2 S.D. above. Two were almost 4 S.D. above the range. The value of 7.2 mg., the highest was obtained from a hemolyzed specimen.

Alkaline Phosphatase Levels – 47 cases or 61% were within the range mentioned in Table 6. Fifteen cases fell below and 15 cases above the range. (The range for 1 S.D. is 4-9 Sigma Units). As shown in Table 6 the published normal[8] is 2.8 – 6.7 Bessey – Lowry – Brock or Sigma Units. Nelson's Textbook of Pediatrics mentions that in children the alkaline phosphatase values utilizing this method could have 9 Sigma Units as the maximum value.

Magnesium Levels – As mentioned earlier in the text, determination of magnesium levels is not a test for parathyroid function but was included here because deficiency of this ion could mimic calcium deficiency tetany.

Of the 77 cases, 64 or 83% were within 1 S.D. Only 3 cases or 4% were below and 10 or 13% were above the range of 1.9 to 2.5 mgs.%.

An analysis of the figures in the table revealed no significant deviations from the normal.

Discussion

Hypoparathyroidism, idiopathic or postoperative is a somewhat unusual but an important cause of convulsions. It is usually not suspected because very often obvious symptoms of tetany are minimal or absent. Glaser and Levy report that seizures occur in 70% of cases of idiopathic hypoparathyroidism.[9] Steinberg and Waldron gave a figure of 52%.[10] Other authors mention that about 40% of hypoparathyroids are seen in clinics because of epileptic seizures.

The clinical picture is devious and varied. Neurological manifestations usually dominate the picture. Interest in the role of parathyroid hypofunction in causing seizures was first aroused at the beginning of the century. Westphal (1901), Ehrhardt (1902) and Pineles (1905) were of the opinion that the association of hypocalcemia and epilepsy are not mere coincidence and Redlich (1911) definitely stated that diminished serum calcium concentration is the causative factor of epilepsy in such cases.[11] Epilepsy as a symptom of hypoparathyroidism has been reviewed by Grant (1953), Sugar (1953) and by Robinson, Carmichael and Cummings (1954).[12]

Although grand mal seizures are the most common, other types of convulsive phenomena, both focal and minor have been described.[13] Blanchard reports that 5 or 12% of his 43 cases had focal seizures.[14] A wide variety of epileptic or pseudoepileptic manifestations occur in the nature of minor events coming within the clinical catagory of petit mal or myoclonic seizures. (Naef and Adle 1959).[15]

The electroencephalogram may be normal or abnormal. Robinson in 1959 summarized the EEG findings – the records are frequently normal, or they may be episodic, slow waves or a continuous dysrhythmia, (Kowallis, 1941; Steinberg and Waldron, 1952; Supthin Albright and McCune, 1943).[12]

In the cases reported in the literature, the response to anticonvulsants was erratic, varying from fair to poor control. The seizures disappeared only when the hypoparathyroidism was controlled by adequate treatment – calcium and Vitamin D preparation. (Holtz, Beretervide and associates; Elliot, Knospe, Eaton and Hines, Hunsworth and Marzels, Gotta and Odoriz).[11] Long term treatment may result also in reversion of the EEG to normal.[13]

From our study, no evidence exists for the presence of parathyroid dysfunction in our total patient group. These results, however, do not serve to refute the existing opinion that patients with hypoparathyroidism have masqueraded as epileptics for months or years and have been treated with a number of anticonvulsants with no improvement.

The small number of cases in this study plus the fact that we are dealing here with a mentally retarded population, could account for the results obtained. As shown in Table 1 in a large percentage of cases, a definite insult to the central nervous system could be pin-pointed. This same etiologic factor responsible for the retardation could be further implicated as the cause of the convulsion.

The results of this study make the clinician, face a problem – whether or not to investigate the parathyroid function of all patients with convulsions. I would nevertheless go along with Blanchard's statement[14] that it is clinically important to consider a general metabolic disorder as a possible etiology of seizures since the underlying cerebral abnormality may be untreatable (infarcted brain tissue) but the general metabolic processes may be readily amenable to treatment.

Summary and Conclusions

1. Parathyroid function was studied in 77 children with convulsions, age 6-16 years (35 males and 42 females), hospitalized at an institution for the retarded.

Serum calcium, total proteins (in conjunction with calcium levels), phosphorus, alkaline phosphatase and magnesium levels were determined.

2. Statistical analysis of the data obtained showed no significant deviations from the normal values.

3. The clinical data of the 77 patients and a review of the literature are presented.

4. Despite the results which are contrary to existing reports, the author believes that in all likelihood, the possibility of parathyroid insufficiency should be looked for in all groups with epilepsy, especially in the young, since the discovery of such a condition would mean saving the patient from further mental deterioration and from the potential hazards of prolonged anticonvulsant therapy.

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References

1. Sugar, Oscar: Central Neurologic Complications of Hypoparathyroidism, Arch. Neurol. Psychiatry, 70: 86-107, (July) 1957.
2. Wallach, D. F., Surgenor, D. M., Soderburg, J. and Delano, E.: Analytical Chemistry, 31: 456-460, 1959 and Turner, G. K.: Assoc. Manual of Fluorometric Clinical Procedures using model 110 Fluorometer.
3. Fiske, C. H. and Subbarow, Y.: The Colorimetric Determination of Phosphorus, J. Biol. Chem., 66: 375-400, 1925.
4. Bessey, O. A., Lowry, O. H. and Brock, M. J.: A Method for Rapid Determination of Alkaline Phosphatase with 5 cu. mm. of Serum, J. Biol. Chem., 164: 321-329, 1946.
5. Schachter, D.: The Fluorometric Estimation of Magnesium in Serum and in Urine, J. Lab. and Clin. Med., 54: 763-768, 1959.
6. Kingsley, G. R.: The Direct Biuret Method for the Determination of Serum Proteins as Applied to Photoelectric and Visual Colorimetry, J. Lab. and Clin. Med., 27: 840-845, 1942.
7. Monograph Supplement to the American Journal of Mental Deficiency, 2nd Edition, April, 1961. A Manual on Terminology and Classification of Mental Retardation. Prepared by Rick Heber.
8. Taken from the Journal of Biochemical Chemistry, 164: 321, 1946.
9. Glaser, Gilbert H. and Levy, Lewis L.: Seizures and Idiopathic Hypoparathyroidism, A Clinical-Electroencephalographic Study. Epilepsia (Amster.), 1:454-65, (June) 1960.
10. Fowler, William M., Jr. and Lung, Sun.: Convulsions and Papilloedema in a Child with Idiopathic Hypoparathyroidism, Calif. Med., 95:180-82, Sept. 1961.
11. Gotta, Hector: Tetany and Epilepsy, Arch. Neurol. Psychiatry, 66: 714-21, 1951.
12. Fourman, P., Davis, R. Howard, James, K. H., Morgan, D. B. and Smiti, J. W. G.: Parathyroid Insufficiency after Thyroidectomy, Brit. J. Surg., 50: 608-619, (May) 1963.
13. Solomon, Seymour and Fine, David: The Precipitation of Seizures by Photic Stimulation, J. Nervous and Mental Disease, 130: 253-60, (March) 1960.
14. Blanchard, B. M.: Focal Hypocalcemic Seizures 33 Years after Thyroidectomy, Arch. Int. Med. (Chicago) 110 (No. 3), 382, (Sept.), 1962.
15. Naef, R. W. and Adle, E.: Idiopathic Hypoparathyroidism: Report of a Case, Ann. Int. Med., 50: 495, 1959.

"The Truth About Cancer"

Hailed as an important weapon in saving lives, a newly revised book about cancer was described today by a local spokesman for the American Cancer Society as "the best possible guide an individual can have in protecting himself from dying of cancer."

Dr. Ernest W. Stein, President of the American Cancer Society, Maine Division, said the book, *The Truth About Cancer*, by Dr. Charles S. Cameron, has received the endorsement of the American Cancer Society and has now been termed the "definitive work" in the diagnosis and treatment of this disease from the layman's point of view.

Dr. Stein said, "We feel the public should be informed about the availability of *The Truth About Cancer* because it has already been shown that it can help save lives through alerting people to the need for prompt detection of cancer."

The book, published as a paperback by Collier Books of New York, was first written twelve years ago when its author was Medical and Scientific Director of the American Cancer Society. He is now President of Hahnemann Medical College of Philadelphia. The new paperback publication has been completely revised to incorporate new information about research, diagnosis and treatment of cancer, including the most recent developments in cigarette smoking as a cause of lung cancer.

It presents many life-saving facts often overlooked by the public: that cancer is the only major disease in which the individual alone influences the outcome to so great a degree; that of all the leading causes of death, cancer is the most curable; that ignorance of cancer is more deadly than cancer itself.

It was announced that copies of the new paperback would be available at book stores, paperback stores and transportation terminal stores.

Dr. Stein said, *The Truth About Cancer* is the newest and most authoritative book on cancer control yet published. In addition it is reasonably priced and therefore within reach of millions to whom cancer may some day become a reality."

Report of the World Conference on Smoking and Health

JOSEPH L. HASENFUS*

INTRODUCTION

The chairman of the Maine Interagency Council on Smoking and Health had the valuable experience of attending the first World Conference on Smoking and Health and through the medium of this report wishes to share with you selected information in abstracted form including quotations from the speeches of some of the notable and famous persons who participated.

The conference group of about four hundred selected individuals represented all areas of the United States and the following foreign countries: Argentina, Australia, Brazil, Canada, Chile, Colombia, Czechoslovakia, Denmark, England, Finland, France, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, The Netherlands, Norway, Peru, Philippines, Poland, Roumania, Scotland, Spain, Sweden, Switzerland, Thailand, Turkey, West Germany, Yugoslavia. Included were scientists, physicians, educators, public officials, voluntary agency leaders and others in leadership roles in the effort to contend with what numerous speakers referred to in various ways as one of history's major medical and public health problems.

At some later date an official publication will be produced containing a detailed report of the conference and the recommendations for action growing out of it. Meanwhile, it is strongly urged that you read this brief document or have someone in your system or organization read it because it surely contains some concepts or information that will be valuable to your specific role in efforts to prevent loss of life and human misery caused by cigarette smoking.

As to method, the conference comprised numerous speeches given at general meetings and luncheons, and thirteen work groups which met separately and reported to the general meeting at the end of the conference. The reports of the latter are to be reinforced subsequently from complete recordings of discussions in all work groups. The recommendations of the work groups when finally published will represent the most valuable product of the World Conference on Smoking and Health.

This report on the following pages is in the form of abstracted information and direct quotations from selected speeches made at the conference.

CONFERENCE OPENING

Luther L. Terry, M.D., Chairman of the World Conference on Smoking and Health, opened the conference. His role as chairman was especially appropriate in view of the fact that he had been Surgeon General of the United States at the time of the 1964 publication of the Surgeon General's Report on Smoking and Health, a document acclaimed throughout the world, and because of his present voluntary position as chairman of the National Interagency Council on Smoking and Health.

Dr. Terry reviewed the key facts in the development of events leading to the holding of this first World Conference and mentioned two major objectives for the deliberations. "First, there is the interchange of information. We are here to compare experiences, to exchange ideas, and to report new medical and scientific findings . . . The second, and perhaps most important, purpose of this conference is to stimulate action. We are here to recommend programs of research and education as well as programs of public and citizen activity to control the smoking problem . . . Let this conference be the starting point for a concerted world wide attack on this menace which is taking far too great a toll of world's valuable human resources."

ADDRESS BY SENATOR ROBERT F. KENNEDY

Kennedy referred to the significance of the gathering of representatives of 34 countries in terms of the problem confronting them, "All of you face mounting death rates from cigarette smoking . . . and all of you share with us a distressing lack of knowledge about how to convince people – particularly young people – not only that cigarettes may kill them, but that they should do something about it." He went on to enumerate the tragic facts as they pertain to the United States, acknowledging that similar statistics prevail in other countries: over a quarter of a million premature deaths associated with cigarette smoking annually; eleven million extra chronic disease cases due to cigarette smoking; one third of all male deaths between 35 and 60 are premature and associated with cigarette smoking; death from lung cancer increased from 2500 in 1930 shortly after cigarette smoking became a national habit to 50,000 now; 4000 children starting to smoke every day; a million children now in school destined to die of lung cancer, if present rates continue; 28 million people now living in the U.S. will die prematurely of diseases associated with cigarette smoking.

He continued, "Every year cigarettes kill more Americans than were killed in World War I, the Korean Conflict, and Vietnam combined; nearly as many as died in battle in World War II. Each year cigarettes kill five times more Americans than do traffic accidents. Lung cancer alone kills as many as die on the road. The cigarette industry is peddling a deadly weapon. It is dealing in people's lives for financial gain.

"Cigarettes would have been banned years ago were it not for the tremendous economic power of their pro-

*Chairman, Maine Interagency Council on Smoking and Program Director, Maine TB and Health Association.

ducers. If the cigarette industry's economic power were as miniscule as that of the marihuana industry, cigarettes would surely be illegal now and their sale subject to severe penalty as a health hazard."

Selected additional comments by the Senator included his belief that inroads made against the smoking habit will be difficult while the industry spends $300 million a year in advertising efforts to "start young people smoking and continue others in their habit." Action is needed to counteract this advertising onslaught. Self regulation and public responsibility have not been forthcoming from the industry. He mentioned favoring current federal legislation requiring disclosure of tar and nicotine content of cigarettes on the packages and in all advertising; the strengthening of the warning on the packages to read *Warning: Cigarette Smoking is Dangerous to Health and May Cause Death From Cancer and Other Diseases*, and to extend this warning to all advertising as well; and the authorizing of the Federal Communications Commission to regulate the time, the type, and the volume of cigarette advertising. In fact, it seemed quite obvious that Senator Kennedy believes that TV advertising of cigarettes should be banned.

In closing he indicated that the new FCC fairness doctrine pertaining to the media, radio and TV, giving counter-balancing time to the health aspects of cigarette smoking, makes it all the more important that we increase our knowledge of how best to be effective with anti-smoking educational efforts, for now we have an increased opportunity to apply them.

Address by William H. Stewart, M.D.,
Surgeon General
Public Health Service
United States Department of Health, Education and Welfare

Influencing Smoking Behavior

Dr. Stewart referred to many of the same facts mentioned by Senator Kennedy, so these will not be repeated here. In addition he added the encouraging fact that polls taken show that the majority of Americans do now understand the dangers of cigarette smoking and are looking for leadership in efforts to combat it. He said that now "our attention is focused on where we go from here . . . to chart a workable course for reducing the harmful impact of cigarette smoking on society and the individual human beings who comprise it. . . . Much of our educational effort, which is gaining momentum day by day, is directed toward these ends: encouraging the young not to start, and encouraging the smoker to stop.

"But since it is quite evident that we are not going to succeed totally in these endeavors, we need to build on the concept of reduced dosage. We can encourage people to smoke fewer cigarettes. We can encourage them to smoke less of each cigarette – a particularly useful point, since it is abundantly clear that the last one-third of a cigarette contains a concentrated dose of the total tar and nicotine content."

Dr. Stewart mentioned that there was much to be done in the area of developing a less harmful cigarette, but "Let us not delude anybody. The truly and totally safe cigarette is still far off. No one should be foolish enough to count on its appearance in time to save him from the consequences of smoking. But cigarettes less hazardous than those now available are well within reach. Less hazardous patterns of smoking are within the capability of every smoker. No matter how the total dosage is reduced, the total risk declines proportionately for the individual and for society."

He also commented on the double jeopardy aspect of cigarette smoking giving the example that ". . . For the population as a whole, cigarette smoking increases the likelihood of death by coronary disease by about 70%. But for those who already suffer from high blood pressure, cigarette smoking jumps the risk to over 200%." He gave another type of example with the case of people living in areas of high levels of air pollution. Those who suffer respiratory diseases as a result of the polluted air almost always are the cigarette smokers.

He closed by referring to this problem as "one of history's greatest challenges to public health and preventive medicine."

Daniel Horn, Ph.D.
Director
National Clearinghouse for Smoking and Health
Public Health Service
U.S. Department of Health, Education and Welfare

How Did Society Get Into the Cigarette Mess? Why Is It So Hard To Find a Way Out?

Horn refers to cigarette smoking as the largest single health problem about which we can do something immediately, but it isn't easy to do something immediately because the silly little habit is complex and has turned into a monster. He says we are hooked individually and as a society. The individual has deeply ingrained the habit and society has developed a mammouth industry, a big agricultural crop, tax revenue for government, and a gigantic customer of the communications media.

How did this come about? Horn says that historically men have searched for sustenance and shelter, but for pleasurable effects also. In search for the latter men have experienced with "things to drink, sniff, smoke, chew or swallow – coca leaf, betel nut, tobacco, alcohol, mushrooms, poppy, hemp, and cactus plants, among others. These have been found indeed to act on the nervous system." People have gotten drawn to these substances and have become addicted and habituated to them and their effects have been variously described as "palliative to face life," "an antidote to stresses and fatigue," "escape from reality," "refuge from physical and nervous frustrations of life," "soothes the nerves," "eases anxiety." Social, cultural, and economic forces can reinforce these habits or as with tobacco chewing and snuff may also do the contrary.

Smoking is gratification behavior but it is undesirable because it can harm the individual himself, and place him in the position of harming others by his example or in other ways in which he may not fulfill his responsibilities.

"The initiation of smoking and similarly the cessation of smoking depend on cultural, psychological, and social factors. Essentially four elements enter into these behaviors:

1. The reasons that go into starting – or not starting – smoking. Similarly, the reasons for giving up smoking – or not giving it up. Cultural factors play an important role here, because one's values are critical in determining the outcome. How important is health to the individual? How does smoking relate to other goals of the individual that may be achieved or denied if one smokes?
2. The perception of the health threat. We are only too aware of the many gaps in knowledge and misconceptions that exist in the general population of smokers about the nature and magnitude of the biological effects of cigarette smoking. As we have shown, not only must one be aware of the fact that a threat exists, one must recognize its importance, see it as personally relevant, and admit both the possibility of stopping and the value to be derived therefrom.
3. The psychological use to which smoking is put . . . People can be identified as using the cigarette in one or more of the following . . .: to *increase* positive feelings – such as stimulation, sensorimotor manipulation, or pleasurable relaxation, to decrease negative feelings – that is, to help cope with feelings of anxiety, distress, shame, etc.; habit smoking in which the (above) affective component has been lost; and psychological addiction which is an organized pattern of alternating an increase of positive feelings with a decrease of negative feelings.
4. Social factors which facilitate or inhibit either continuing smoking, or continued success as a nonsmoker. Here social forces, interpersonal influences, mass communications, and the role of key groups all can play an important part."

The above is a model for smoking behavior change about which Horn has written before.

"Since the problem is behavioral in origin, much of the solution will have to come from a behavioral approach. The values that are important to nonsmoking must be stressed over those which are met by smoking; clear and accurate perception of the threat must be achieved; psychological needs and gratifications must be achieved through appropriate substitutes; and the weight of social forces – from personal forces to institutional forces must be squarely in support of our efforts.

Our task with the cigarette consuming public is clear:

1. We must get people to stop ignoring the problem.
2. Then we must get them to initiate the action to stop – invest the energy it will take to alter their way of behaving.
3. We must maximize the short term success – find the ways to help them through the initial period without cigarettes; find substitute gratifications without serious side effects; individualize therapy to the individual's problem.
4. We must maximize long-term success by establishing a climate in which the ex-smoker has no desire to return to his former habits."

RICHARD H. OVERHOLT, M.D.
Director, Overholt Thoracic Clinic
Boston, Massachusetts

THE PHYSICIAN AS AN EXEMPLAR

In discussing the importance of the physician giving health instruction to his patients and setting a good example for them, Dr. Overholt said, "Doctors individually are in a unique position of influence. . . . On a person to person basis the doctor is held in great reverence. The relationship between doctor and patient is continuous. It precedes and extends beyond periods of illness. . . . The free choice of an advisor in matters of health automatically secures the individual doctor in this unique and top position of influence.

"If the epidemic of cigarette-caused death and disability is conquered, it will be a triumph for the medical profession by whose example, teaching and research, this will have been accomplished. At the present time, we can be proud that, among our own ranks, the rate of smokers had dropped significantly and probably a greater drop than can be shown in any other profession or occupational group."

Dr. Overholt went on to explain that there is another side to the story. He feels that if there isn't success the blame will fall on the medical profession. He deplores the fact that in spite of the evidence many doctors still smoke cigarettes, setting bad examples for others; some even deny the evidence and comfort the interests of the cigarette industry, and in these ways discredit the whole medical profession.

Quoting from a previous statement he had made at the annual meeting of the New York Medical Society he said, "If we, as physicians, are to lead the way we can certainly do more in the area of prevention by individual health education than we can by therapeutic advice after degenerative changes have accumulated. These steps we can take now:

1. Advise relatives, friends, and patients convincingly of the immediate and long-term ill effects of smoking.
2. Create "no smoking" areas where you have jurisdiction or influence such as in your own offices, hospitals and clinics.
3. Participate in educational programs in your communities, particularly schools, church groups, and clubs.

4. Set an example, at least in the presence of patients and nurses.

"Unity among doctors on the cigarette issue is vital. Doctors who stop smoking will help most. Those who hide their smoking will help a little. And tragically, many of those who continue to demonstrate the practice will eventually make their contribution by their martyrdom."

C. M. Fletcher, C.B.E., M.D., F.R.C.P.
Reader in Clinical Epidemiology
Royal Post Graduate Medical School
London, England

Much of what Dr. Fletcher presented was on the physician level of interest and understanding, but for all of us he had also comments of value. For example, after discussing various studies in England relating to chronic respiratory disease he explains that in addition to interference with ventilatory function in cigarette smokers is impairment of the ability of the systems to get oxygen from the air into the arterial blood, and that this is true *even in young* and apparently undisabled smokers. One study showed that a group of young smokers who stopped smoking shortly showed improvement in ventilatory function, gas transfer, and cardiovascular performance on exercise. On the other hand in established cases of chronic bronchitis and emphysema the damage done to the lungs appears to be irreversible and although cough may be lessened by stopping smoking the impairment of pulmonary function is not lessened much. Dr. Fletcher estimates that is costs the smoker from 6 to 12 thousand dollars for the cigarettes that ultimately cause his condition of chronic bronchitis or emphysema and an additional heavy economic burden to delay the final outcome of the disease.

He closed his talk with the following hope, "If at this conference we can advance our understanding of how to help young people not to start smoking cigarettes and their elders how to stop we shall have found a way to prevent a lot of most unpleasant hawking and spitting, we shall have countered vast misery and economic loss due to recurrent illnesses and we shall have saved future generations of doctors contending in vain with the breathless disability which is the distressing prelude to premature death in so many cigarette smokers throughout the world today."

Sir George E. Godber
Chief Medical Officer
British Ministry of Health
London, England

The British Experience

". . . Most preventive medical work consists of one of three things: either trying to eliminate something from the environment, which by common consent should not be there; trying to eliminate an infective agent or to confer on the great majority of the population a specific resistance to that agent; or trying to limit disability by early diagnosis and treatment or by full rehabilitation after specific treatment. With smoking we are really attempting none of these things. The smoker chooses for his own gratification to introduce into his own personal micro-environment the agent that will do him harm. What we are trying to do is to persuade him that that voluntary act is not only a long term threat to his future, but also an inducement to others to adopt the same folly. We are, in fact, asking for an almost infinite number of acts of self-abnegation so that a dirty and dangerous habit can be eliminated from society. . . ."

His reference to the fact that the medical profession, knowing the facts about cigarette smoking dangers, has set a good example in stopping the habit till only a third now smoke, contained as well indication that the fact of the third who still do smoke shows how strong is the compulsion for so many people. . . . Though people are becoming informed to the dangers, they do not relate the immediacy of the danger to themselves. It is remote in time. He referred to a report by the Royal College of Physicians on this problem not only as a good report on the dangers but as significant because it was only the second time in 500 years that the College had attacked a public evil of this kind. . . ". . . we have been concentrating on the relatively remote risk of death; we ought now to make more of the early effects and the proven benefits of stopping. The young need to know the damage starts now."

"One thing that remains abundantly clear is that the influence of adults, and especially of parents, who smoke is real even at this age. This seems to me the worse problem that faces the adult smoker. He can take risks for himself, but he ought to face the fact that his smoking affects not only him. It may, of course, be offensive to the nonsmoker, like me, who happens to be in the same room, but that matters little compared with the evil example to which it exposes the children with whom the adult is connected in one way or another. It is never too late to stop smoking for one's self; it is never too early to stop smoking for those one may influence otherwise in favor of it.

"We don't want just to limit cigarette smoking; we want it to stop. If we can't persuade a man to stop smoking, then we must do all we can to see he keeps to a cigar or pipe. We haven't got time to look for a safer cigarette and spend twenty years proving it. . . ."

Louise E. Hock, Ph.D.
New York University

The School and Smoking

". . . it would be foolhardy to assume that teaching about the dangers of tobacco in the schoolhouse will have an appreciable impact on behavior in the home and community. I am referring . . . to any naive belief that formal education per se can have a successful countervailing influence on a society already strongly seduced by the "pleasures" of smoking and constantly

tempted by the persuasive blandishments of the tobacco industry and its advertising associates . . . nothing less than a systems approach to the problem of smoking and health is needed.

"Efforts must be made to change the behavior of adults, to modify value systems, to put forth appropriate models and exemplars throughout all segments of society, to influence the images received through our television media; in effect to modify the habits of an entire people."

Guiding Principles

1. . . . not merely curriculum but the entire educative environment – people, physical setting, methodology, materials, purpose, all are important.
2. . . . the development of understandings that are translated into attitudes and then into behavior or lack of behavior.
3. . . . avoid preaching or moralizing.
4. "The task facing the school must be viewed as arduous, continuous, never-ending and inclusive of kindergarten through high school and college. The relationship between smoking and health must be viewed as an integral part of the school's curriculum and environmental settings and a lasting part. There is no place for crash programs. As long as cigarettes are manufactured, advertised, and sold, the task remains. There can be no end to it. We must exercise the same scientific patience with which the scientist, the medical researcher, the physician views experiments and treatment.
5. "The school must deal with the task honestly in all its ramifications. It cannot restrict itself to teaching about the health hazards, if it is to have any effect. It must also teach about the role of industry in American life, the place of tobacco in our economy, the function and power of lobbying, the influence of advertising. Those who ask the school to assume any responsibility in this area must be ready to let the chips fall where they may and accept the consequences. This means a willingness on the part of physicians and scientists in a community to back the superintendent, the board, and the educators if and when the tobacco interests complain about what is happening in the schools."

Specific Suggestions

". . . whatever the school does about smoking and health must be of an on-going nature, must pervade the school scene and curriculum, must permeate the program at any and all levels, in any and all appropriate subject areas. There are no magic potions – in the form of tidy little teaching units, colorful and dynamic materials, or literate and erudite lectures – that will do the job alone, if indeed they are at all effective. If anything, I would stress subtlety *in approach* – through the constant integration of content into all relevant aspects of the curriculum and through consistent actions and activities throughout the educational enterprise. This in no way suggests that we be evasive or indirect in our treatment of facts, concepts, and understandings . . . content must be concrete and direct, but our message, our medium, our "packaging" must be "cool."

Examples are then given about how to integrate facts and concepts in the different subject areas throughout the school years and consideration of methodology away from the didactic and featuring the problem and pupil involvement approach.

Sir Austin Bradford Hill, CBE, F.R.S.
Professor Emeritus of Medical Statistics
University of London
London, England

Problems In Conducting Smoking Research

Controlled experiments are not practicable and perhaps not ethical as they pertain to determining a safe cigarette because they may necessarily extend over a prolonged period of time and hence encourage people to smoke who might have stopped. It will be necessary, therefore, to rely upon observation of what people *choose* to do, and with what result.

An example of the above is the findings of Auerbach and Hammond in which it was shown that sections from the bronchial tree had certain atypical cells in smokers and those cells disintegrating in persons who had given up smoking. A study could be made of all persons coming into autopsy and relating findings to changed or unchanged smoking habits.

So many physicians have given up cigarettes in the last few years that a study was made that showed that there has been a fall in deaths among them from the cause of lung cancer.

A popular study would be that of determining the physical and psychological profiles of people likely to suffer most from smoking. Since smoking does not hurt all people, most smokers are interested in being assured that they are not among those who will get lung cancer or the other ailments. This is realistically just a will o' the wisp – there is no hope of defining persons in this way. "The underlying factors are unlikely to be simple factors. Demographically the association of cigarette smoking and cancer of the lung has been shown over an almost world-wide range of genetics and environments."

"The main issue today, however, is how do we teach children not to start smoking and how do we help to quit those of the adult population who seek to do so. . . .

"It is sometimes said that we may induce anxiety in those who find they cannot quit. Has anyone tried to find out? Are those unable to quit any more anxious after than before the event? And, if so, are we to sacrifice to them those whom we *can* help quit?

"There is also a good deal said about the teaching and propaganda disturbing equanimity or making neurotics as well as interfering with personal freedom. But advances in public health have always interferred with

personal freedom. We make the public drink pasteurized milk and fluoridated water. We insist on inoculations – for fear of disease – and on driving cars at prescribed speeds and curb drills for children – for fear of sudden death. There is really no dearth of precedent whether by dictation or education. Is this problem so very exceptional?"

Lester Breslow, M.D.
Director
California State Department of Public Health
Berkeley, California

Results of Government Action and Legislation: What Other Government Action Is Needed?

After enumerating the various things government has done, reports, educational campaigns directed toward children and adults, FCC fairness doctrine, labeling act, ban on advertising, increase of taxes on cigarettes but not on other forms of tobacco products, he goes on to say that government should get serious about this problem if it regards the health of people as a primary concern. "Government must tackle boldly the economic problem of the cigarette industry. Substantial capital investment and large scale industrial organizations are now committed to the manufacture and distribution of cigarettes in the 'developed' nations; the 'developing' nations are tending to follow this same pattern as one of the elements of the 'improvement' of life. Whether in capitalist or socialist economy, this fact overshadows all other considerations in dealing with the problem of cigarette smoking.

"The test of seriousness in governmental effort to control cigarette smoking, hence, becomes the extent to which governmental economic policy is committed to the prevention of growth of the cigarette industry where it is not yet established and to its conversion to something else where it is established."

". . . Deliberate serious economic planning to curtail the production and distribution of cigarettes would go far beyond taxes and consumer education, although both of these are obviously necessary. Planning and action should encompass governmental financial aid to compensate for capital investment in the cigarette industry, where necessary, and financial aid in the development of alternate economic activity, including the retraining and relocation of agricultural and industrial workers where necessary."

Judith S. Mausner, M.D.
Assistant Professor of Epidemiology
Department of Preventive Medicine
Woman's Medical College
Philadelphia, Pennsylvania

and

Bernard Mausner, Ph.D.
Professor of Psychology
Beaver College
Glenside, Pennsylvania

The Role of The Physician in The Control of Smoking

". . . the work of experimental social psychologists on attitude change suggests that influence is greatest when the source is perceived as being expert in the areas relevant to the attitudes under attack. (There was reference also to the superiority of personal influence over impersonal communications, as revealed by studies.) On the basis of both of these concepts it seems apparent that the physician is the source most likely to influence people in matters concerning health, and that personal contact with a physician is the most hopeful technique for inducing change."

A research project wherein a single contact with a physician produced the effect of helping 24% of those interviewed to stop smoking was adduced as evidence of the power of the 'role' of the physician in altering health related behavior. If this is true it is encouraging. It suggests that even physicians seeing patients with whom they have no continuous relationship, such as physicians working in industrial settings or participating in mass screening programs or health fairs may play an important part in helping individuals to reduce their smoking.

It was also pointed out that there are factors working against the physician acting to discourage smoking. 1.) The 25% who still smoke will have various weaknesses in this respect. 2.) Physicians traditionally have been trained to focus on the care and cure of sick patients rather than on prevention which is the biggest aspect of this health problem. 3.) Their lack of training in statistics and epidemiology makes them prey, some of them, for the cross claims of the tobacco industry and unable to effectively transmit to the patient the full force of statistical evidence. 4.) Formal training in behavioral science may be necessary before physicians generally will understand the extent of their potential in the physician – patient relationship. 5.) In addition to his primary role the physician is also a subject like the rest of us of society at large including the forces which perpetuate smoking.

John Wakefield, Head, Dept. of Social Research
Christie Hospital and Holt Radium Institute
Manchester, England

Changes in Advertising Expenditures and Smoking Behavior After The Ban on Television Advertising in The United Kingdom (Effective August 1, 1965)

The content of his paper was summarized as follows:

1. Loss of income to TV companies from cigarette advertising was more than made up by advertisers of other products.
2. Cigarette advertising switched from TV to the press, while on TV there was greatly increased advertising of cigars and pipe tobacco. The latter were increased in the press as well.

3. There was a great increase in expenditure for coupon schemes to sell cigarettes.
4. Among males, including the 16 to 19 year olds, there was an increase in the proportion smoking only cigars and pipes.
5. The decline in cigarette tobacco consumption by men since 1960 continued in 1965 and 1966. Consumption by women rose in 1966 after declining in 1963.
6. The number of nonsmokers in the population aged 16 or over remained the same (32%), but fell from 57% to 55% in women.

W. T. Robbins, M.D., Director
Student Health Service
University of California
Santa Barbara, California

The Present Situation in Colleges and Universities And A Look At The Future

His paper deals in the beginning with the reactions of students to the dangers of smoking. They generally regard the dangers as valid but remote and of not immediate concern to them personally. The average college smoker resents anyone trying to get him to stop smoking but is very willing to dissuade the potential smoker from beginning to smoke. They are not in favor of legislating against it. Many say they would not quit if they could but see no sensible reason for those who are not smokers starting.

On college campuses across the country there have been many information-seeking studies made of college students regarding whether or not they smoke and other related information. Some broad conclusions:

Entering freshmen smoking,
prior to '64 — 20-30%
1964-66 — 3-22%
1967 — beginning increase

Seniors have twice as many smokers as freshmen.

Smoking behavior of friends is an influence, so is money to buy the cigarettes . . . Students who smoke do have more of the usual types of illnesses associated with smoking . . . The college population, the opinion leaders of tomorrow do not anymore than any other group, stop smoking simply because they can perceive the dangers.

The key challenge is to come up with a plan that will end with cigarette smoking regarded as a totally unacceptable form of social behavior. "For our purposes, we should assume that a really safe cigarette will not be in general use in the foreseeable future."

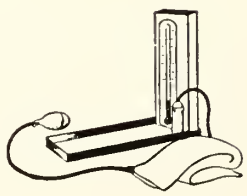
Other Challenges:

1. *Information* – Continue to gain information testing if we know enough about why people smoke, don't smoke, start, stop, etc.
2. *Education* – How should smoking and health education best be presented in colleges. Terry thinks it is best to present the facts without preachment or prohibition. This would be the foundation for decision making by the individual.
3. *Campus Climate* – The suggestion is that policies should reflect the concern of the administration for the health of the students. Selective controls are mentioned. These include no smoking in classrooms, labs, no ashtrays, no vending machines, etc. Some disagree with doing anything.
4. *Organization* – Consider a way of an organized approach to reach all college students with this program.

R. T. Ravenholt, M.D., M.P.H., Director, Population Service, Office of the War on Hunger, Agency for International Development, Dept. of State, Washington, D.C., in his talk, included two comments that make a good closing for this report:

"For the American male who habitually smokes a pack or more of cigarettes per day, tobacco is an environmental hazard equal to all other hazards of life combined.

"Teachers, students, and practitioners of health sciences have a foremost opportunity and duty to provide exemplar leadership toward abatement of this important environmental hazard to health."





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(1) Bilbao, M. K.; Frische, L. H.; Rösch, J., and Dotter, C. T.: Hypotonic Duodenography, Scientific Exhibit, Radiological Society of North America, Chicago, Nov. 27–Dec. 2, 1966.

(2) Bilbao, M. K.; Frische, L. H.; Dotter, C. T., and Rösch, J.: Hypotonic Duodenography, Radiology, in press.

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Warning: Do not use during first trimester of pregnancy unless potential benefits outweigh possible risks. There have been clinical reports of congenital malformation, but causal relationship has not been proved. Animal teratogenic studies have been inconclusive.
Precautions: Use with caution in moderate hypertension and cardiac decompensation. Cases involving abuse of or dependence on phenmetrazine hydrochloride have been reported. In general, these cases were characterized by excessive consumption of the drug for its central stimulant effect, and have resulted in a psychotic illness manifested by restlessness, mood or behavior changes, hallucinations, or delusions. Do not exceed recommended dosage.
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Now available: V-Cillin K®, Pediatric, for Oral Solution, 250 mg. (400,000 units) per 5 cc. of solution.

(See next page for prescribing information.)

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Description: V-Cillin K, the potassium salt of V-Cillin® (phenoxymethyl penicillin, Lilly), combines acid stability with immediate solubility and rapid absorption. Higher, more rapid serum levels are obtained than with equal oral doses of penicillin G.

Indications: Streptococcus, pneumocaccus, and gonococcus infections; infections caused by sensitive strains of staphylococci; prophylaxis of streptococcus infections in patients with a history of rheumatic fever; and prevention of bacterial endocarditis after tonsillectomy and tooth extraction in patients with a history of rheumatic fever or congenital heart disease.

Contraindication: Penicillin hypersensitivity.

Warnings: In rare instances, penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin or with bronchial asthma or other allergies. Resuscitative drugs should be readily available. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: Use cautiously, if at all, in a patient with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with high parenteral dosage schedules, frequent evaluation of the renal and hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory studies (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth of penicillin-insensitive organisms. In such cases, discontinue administration and take appropriate measures.

Adverse Reactions: Although serious allergic reactions are much less common with oral penicillin than with intramuscular forms, manifestations of penicillin allergy may occur.

Penicillin is a substance of low toxicity, but it possesses a significant index of sensitization. The following hypersensitivity reactions have been reported: skin rashes ranging from maculopapular eruptions to exfoliative dermatitis; urticaria, and reactions resembling serum sickness, including chills, fever, edema, arthralgia, and prostration. Severe and often fatal anaphylaxis has occurred (see Warnings). Hemolytic anemia, leukopenia, thrombocytopenia, and nephropathy are rarely observed side-effects and are usually associated with high parenteral dosage.

Administration and Dosage: Usual dosage range, 125 mg. (200,000 units) three times a day to 500 mg. (800,000 units) every four hours. For infants, 50 mg. per Kg. per day divided into three doses.

See package literature for detailed dosage instructions for prophylaxis of streptococcus infections, surgery, gonorrhea, and severe infections.

How Supplied: Tablets V-Cillin K, U.S.P., 125 mg. (200,000 units), 250 mg. (400,000 units), and 500 mg. (800,000 units).

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Special Article

Drugs — Judgment or Regulation?

As with many important issues today the subject of so-called "generic dispensing" is clouded with a great number of confusing and conflicting statements.

Generic prescribing is not new and has been an integral part of prescribing for many, many years. A drug usually has three names: a chemical name, which has significance primarily to the chemist and other scientists; a generic or public name, which is somewhat simpler and has greater understanding in pharmacology, medicine, and pharmacy; and a trade or brand name which conveys information as to the manufacturer of a particular product. Thus for particular generic drug entities there may exist different brand names, connoting a difference in the method of manufacture, controls at different levels of production, and a history of clinical performance characteristic of *that particular brand.*

A pharmaceutical product is more than a drug, and the care, skill and integrity employed in its manufacture may make all the difference in the performance of that product in a patient. There are those who would have us believe that all products containing the same generic drug are therapeutically identical but this is not true. The Commissioner of the Food and Drug Administration in recent testimony and speeches has clearly indicated that although he might like to give the assurance that all drug products are clinically equivalent, at this point in time he cannot honestly do so.

A great deal has been made of the fact that the government buys drugs under generic names only. However, if one examines the bid awards, one finds that an overwhelming majority of products are supplied by brand name manufacturers. In a recent speech, a representative of the Defense Personnel Support Center indicated, "Basically, our problem is this: chemically equivalent items are not necessarily stable, therapeutically equivalent products . . . 45% of the pre-award samples submitted by the low bidder last year failed to pass our tests."

The truth of the matter is that the technology of understanding drug action, availability, absorption, excretion, binding, partition coefficient, solubility, enzymatic interaction and a host of other factors is still in its infancy. These are more than mere technical characteristics; they are determinants of therapeutic performance. Thus the history of *experience* by the physician and pharmacist and the integrity of the producer to produce drugs which result in consistently reproducible action is the most reliable guide available at this time. Any effort to remove the prescription decision from the physician and substitute some government constituted authority, is a dangerous proposal which could be detrimental to the health of the patient and a serious blow to high quality medical care in this country.

The number of products for which generic prescribing might result in savings for the patients represent less than 20% of the total number of prescriptions dispensed annually. In some of these instances the real savings are relatively insignificant. The proposed savings that are supposedly available have been wholly exaggerated. In the majority of instances of generic prescriptions, it has been the policy of most pharmacists to dispense only those products which experience has shown to be therapeutically reliable – generally a branded product.

The physician, who has the ultimate responsibility for the treatment of the patient, should be constantly aware of the drug products *prescribed* and *dispensed* for his patients. He can on occasion, by consulting with his pharmacist, select products in which a degree of confidence can be assured with some cost savings resulting. However, an understanding of all parameters involved is essential. There have been too many instances where patients on maintenance therapy with such drugs as anticoagulants are hospitalized and products of different manufacture are supplied with disturbing and even life-threatening results.

Regardless of the advancement of our scientific information, a great deal of the practice of medicine and of pharmacy involves the use of professional judgment. Any artificial barriers which interfere with the exercise of this judgment are unwise and dangerous. The physician should be free to prescribe the products which he deems best for his patients. Any changes in the medication should only come about after proper consultation between physician and pharmacist and only effectuated with the consent of the physician. Those who seek other approaches should make certain that they are fully aware of the consequences that may result and determine whether the risks involved are truly worth the savings. In the best interests of public health, we do not believe that they are!

DEAN H. FISHER, M.D.
COMMISSIONER

State Of Maine

Department of Health and Welfare

Deficiencies in Maine's Mental Health Services

JOHN B. LEET*

Maine's mental health planning efforts have pointed out that in each planning area of the state the following are the most significant needs:

1. Manpower trained in mental health professions.
2. Facilities to service rural areas.
3. Facilities for evaluation and research.

Maine has a total population of less than a million people. The more populated areas are in the southwestern part of the state. Portland, Maine, is the largest city in the state, having about 75,000 population. The eastern, central, and northern parts of the state are sparsely populated and distances between the cities and towns are great. Rural areas have a serious problem in attracting and retaining well trained mental health personnel. Significant advances have been made in the field of mental health in Maine during the past decade, quite naturally in the more populated areas. Much remains to be done in vast areas of the state such as Aroostook and Washington Counties.

The dearth of community minded psychiatrists is a serious unmet need since there are only *12* psychiatric specialists in private practice in the whole state, approximately 10 of whom are located in the southern part. In all of northern Maine, with a population of about 300,000 people, there are only two psychiatrists in private practice. At the outset of planning, psychiatric services in general hospitals in Maine were almost non-existent. Large communities, such as Bangor, with excellent general hospitals still have no psychiatrists on their staffs. Psychiatric personnel such as psychologists, psychiatric social workers, and psychiatric nursing personnel follow the same pattern of scarcity in the State.

Our institutions and our community clinics for the mentally ill have never acquired a full complement of professionally trained psychiatric personnel. The caseloads are extremely heavy and not conducive to attracting and holding this type of personnel. The superintendents of our larger institutions have attempted to remedy this problem so far as they are concerned by acquiring the services of non-psychiatric physicians and including them on the staff whenever possible and also by allowing career employees with necessary aptitudes and intelligence, educational leave with pay in those professional classifications which are most difficult to recruit. The continued shortages in psychiatric personnel have led many other more prosperous states to set up their own training programs in order to turn out a sufficient number of personnel to fill their own needs. Maine is largely dependent on the wealthier states for providing such trained professional mental health personnel.

Approval for residencies in psychiatry in facilities which have inadequate staffs is impossible to obtain. Maine has four major colleges yet does not offer any graduate educational programs in the various fields of mental health with the exception of a doctorate program in clinical psychology at the University of Maine. There is no medical school. This lack adds greatly to the chronic problem of recruitment of mental health professionals. At least one-half to three-quarters of the people in the field of mental health serving in our state institutions and clinics receive their education outside of Maine. The larger number who have attended institutions of higher learning outside of Maine reflects again in part a lack of local professional training facilities. Ninety-seven percent of the recruitment of personnel in the institutions and clinics is done directly by the directors involved. Advertising in the professional journals and personal contact at professional gatherings are the chief means of attracting personnel.

We suspected that in the future developments of our comprehensive community mental health program community psychiatry would tend to be developed at the expense of institutional psychiatry. We thought we could foresee professional personnel now working in state institutions leaving these institutions for community psychiatry but to date this has not been a significant problem.

Maine offers an average salary range for psychiatric and allied personnel. Salaries offered federal employees

*Mental Health Planner, Bureau of Mental Health, Department of Mental Health and Corrections.

with similar qualifications are significantly higher than state salaries. Therefore, federal installations enjoy full staffs in areas where state facilities are still seeking help. Again, it is economically impossible for community services in rural areas to offer salaries to mental health personnel commensurate with those offered in the more populated areas.

Some of the present state personnel are not so experienced with modern methods of prevention, diagnosis, treatment and rehabilitation as one would like. The professionals, both in private practice and public service, have done a marvelous job but they are so few and poorly distributed that their effectiveness is not evident to all people of the state.

Although the picture of manpower in our rural areas is somewhat dismal, under the present leadership the development of the community mental health centers in the State has been most encouraging. Community interest, stimulated by Maine's Mental Health planning, has increased the demand for mental health services throughout the State. New mental health clinics have been established in strategic locations and as noted a state matching grant-in-aid program now involves over 15 community mental health clinic programs.

Another problem area in our programming and planning is the establishment of a statistical system to evaluate our treatment programs. When planning commenced in 1963, the first step of the Bureau of Mental Health and the Governor's Advisory Committee on Mental Health was to establish a statistical service. The need was evident. Planners have to have certain data in order to substantiate a program for mental health facilities and services. At present, our statistical system employs a full-time statistician and a part-time clerk-typist only. They have developed statistical reporting forms for state hospital inpatient admissions, patient movement, and outpatient clinic terminations. Owing to the lack of data processing equipment and adequate personnel, only limited arrangements for data processing have been made. We now need a budget adequate to retain and expand the personnel of this service and for equipment and supplies. Such funds would enable the service to collect data urgently needed for implementation, program planning and research. If the Department of Mental Health and Corrections intends to evaluate programs within its jurisdiction quantitatively, there is need of a modern data processing system planned by a trained systems analyst. A planner can make no determinations whatsoever unless he is able to evaluate program weaknesses and strengths.

The early implementation of such a program is in line with the recommendations of the Federal government that states should take a very careful look at the system of planning, programming, and budgeting instituted by Mr. Charles Hitch, Assistant Secretary, in the Department of Defense in 1961. This program requires of each agency certain skills and activities. The first of these is a permanent specialized staff carrying out continuing in-depth analysis of an agency's objectives and its programs to meet them. We need a stronger systems program in The Department of Mental Health and Corrections not just to look at how we are doing our work now and whether our methods are good or not but whether we are doing the things we should be doing. Should we be doing something else? Is there another way of getting there from here? These are not just methods but objectives and goals.

The State of Maine is not carrying its fair load of research projects. It is easy to determine why this is so. This defect should be corrected by the procurement of full-time qualified researchers and necessary construction of adequate laboratory facilities and equipment – for research – in the field of mental health. With the establishment of recognized research centers, recruitment of qualified manpower should not be so difficult as it now is. Closer working relationships should be established with the existing colleges in the State. The recent passage of the law creating the Maine State Board of Human Research and Development is a step in the right direction.

Under this law "There is created the Maine State Board of Human Research and Development composed of the chairman of the Mental Health Advisory Committee, the chairman of the Maine Commission on Retardation, the chairman of the State Board of Education, the chairman of the Advisory Committee on Health and Welfare, a trustee of the University of Maine, to be appointed by the Board of Trustees of the University of Maine, a representative of the Executive Department to be appointed by the Governor and the chairmen of the Education, Health and Institutional Services, and Welfare Committees of the Legislature.

"The board shall be concerned with the approval and allocation of funds for research projects, and for pilot projects trying new methods in the fields of mental health, mental retardation, education, public health, social welfare, rehabilitation and delinquency.

"The board shall be responsible for the allocation of funds to private and public applicants in the State of Maine for human research and development. The board is authorized to accept gifts or contributions from private individuals, agencies or organizations and such others funds as may be given to the State from sources other than the Federal Government for such purposes. The board shall develop procedures governing application to such funds, for the evaluation of applications and for the allocation of funds to applicants, employing such may be necessary in carrying out its purposes. Board members shall be compensated for their actual expenses incurred in carrying out the function of the board.

"In research and pilot projects financed with funds granted by the Board, the requirements of the State Personnel Law and purchasing through bid shall not be applicable. The State Auditor shall be responsible for reviewing the expenditures by applicants receiving grant funds authorized by the board.

"Sec. 2. Appropriation. There is appropriated to the Maine State Board of Human Research and Development 10% of the sums collected by the Department of Mental Health and Corrections as reimbursement for support furnished patients at the Augusta State Hospital, the Bangor State Hospital and the Pineland Hospital and Training Center.

"Such percentage of said receipts shall be credited to the account of the board at the close of each fiscal quarter. Any unencumbered balance in excess of $200,000 in said account realized from such receipts at the close of each fiscal year shall lapse to the General Fund. All other balances shall carry and may be expended in accordance with the purposes of this Act."

There have been other problems in the implementation of the Mental Health Plan but we think our progress has far outreached the problems that we have met to date. One of the more common problems is the difficulty of coordinating agencies which are more or less autonomous in their own services; but interested enough to work closely together to form the comprehensive community mental health center program. We find a multitude of differences in working hours, salaries, personnel rules and regulations etc. especially in a setting where a center is to house several state and local services. All in all, the implementation of Maine's Mental Health Plan to date has been successful to a degree. We have developed strong public support for mental health activities for many years to come. We feel we have planned prudently and wisely for the best use of the funds being placed at our disposal. Our geographical distribution of mental health services are of the highest possible quality under the circumstances outlined.

PHYSICIAN NEEDED FOR WINTER CRUISE

MAINE MARITIME ACADEMY

1968 WINTER CRUISE

DEPART	*DATE*	*ARRIVE*	*DATE*
CASTINE	8 JAN	FREEPORT	12 JAN
FREEPORT	13 JAN	CRISTOBAL	17 JAN
CRISTOBAL	18 JAN	BALBOA	18 JAN
BALBOA	20 JAN	ACAPULCO	25 JAN
ACAPULCO	27 JAN	SAN FRANCISCO	2 FEB
SAN FRANCISCO	8 FEB	LONG BEACH	9 FEB
LONG BEACH	11 FEB	BALBOA	20 FEB
BALBOA	21 FEB	CRISTOBAL	22 FEB
CRISTOBAL	22 FEB	KINGSTON	24 FEB
KINGSTON	26 FEB	HAMILTON	1 MAR
HAMILTON	3 MAR	CASTINE	6 MAR

Physicians interested in all or part of the trip contact:

ROBERT F. RUSSELL, M.D.
Castine, Maine 04421
Telephone 326-8622

or

ADM. EDWARD A. RODGERS
Maine Maritime Academy
Castine, Maine 04421
Telephone 326-4311

AMERICAN CANCER SOCIETY - MAINE DIVISION, INC.

Brunswick, Maine

The "Image" of Cancer*

STANLEY WARREN**

While there is widespread recognition that cancer plays no favorites and can strike anyone, there seems to exist a broad divergence over the prevalence of the disease. In general, it can be said that people underestimate the likelihood of getting cancer and that they have little or no factual knowledge about how many people get cancer. What are the figures?

According to the American Cancer Society, cancer will strike about 25% of the population, or one person in every four, during their lifetimes. A recent ACS survey conducted by Lieberman Research, Inc., New York, brought out that a quarter of those queried strongly underestimated the incidence rate of cancer. This group believes, the probe found, that the chance of being struck by cancer is less than one in ten. Another 25% of those asked felt that of each 100 persons between 10 and 19 will develop the disease. A third 25% of those queried were about right in their estimates, while the fourth and last group exaggerated the risk.

These figures, then, reveal that by and large, the population of the United States tends to underestimate rather than overestimate the incidence of cancer.

Asked about the likelihood of getting cancer, most people — about 78% — said they were about as likely as other people to be hit by the disease. Some 6% felt they were more likely than other people to contract cancer, with the remaining 16% feeling they were less apt to be stricken.

Of those who felt they are less likely to get cancer, the main reasons offered were "I'm healthy" — 41%; "I don't smoke" — 26%; and "cancer does not run in my family" — 25%.

The probe also revealed that among those queried about the incidence of cancer, it was the men who underestimated the threat to the nation's health and women who overestimated the challenge.

Those who take physical examinations including cancer tests, the survey showed, differ not markedly from the non-goers in the reasons offered for believing they are more likely to get cancer. These two groups do differ strongly in the reasons they cite for thinking they are less likely to become cancer-stricken. Takers or goers feel that by going for check-ups regularly, cancer can be detected early and thus can be "stopped before it really gets started." On the other hand, non-goers feel they are less likely to get cancer because they feel "fine and healthy." They tend to be skeptical about preventive medicine, often failing to understand that cancer may be beginning even though the individual feels fine.

On the matter of recovering from cancer, about half the population, the ACS probe showed, believed that if a person gets cancer he has a "fairly good" chance of recovery. A smaller group thought he had a "very good recovery chance." At the other end, some 23% think a cancer patient has "not much chance" or "no chance at all" of ever getting well.

It's stimulating to report that about three-quarters of all Americans feel that the discovery of an over-all cancer cure is just around the corner. With 49% believing the cure will be found in the next 10 years, an additional 28% feel it will arrive in the next 10 to 20 years. The other side of the coin shows that about 25% of the population is less sanguine about the over-all cure. Some 10% feel it is more than 20 years away; 8% have no idea of when it will be found; and a pessimistic 5% believe the sure cure will never be found.

How much personal contact do people have with cancer? The ACS survey finds that 45% of those sampled reported that someone in their family has had cancer. This includes the 26% who indicate one person in their family has had cancer and 19% who stated that cancer had struck two or more members of their family. Here's the chart of the extent to which family members have had cancer. And along with it a chart on those who recovered.

	Total	*Current Goers*	*Past Goers*	*Non-Goers*
Have Had Cancer In Family	45%	53%	54%	38%
One person	26	29	28	23
Two or more people	19	24	26	15
Have Not Had Cancer In Family	55	46	46	61
DK, NA	*	1	*	1
Total	100%	100%	100%	100%

*Less than 0.5 per cent.

	Total
Had Family Members Who Recovered From Cancer	34%
One person	28
Two people	5
Three people	1
Four people	*
Five or more people	*
Have Not Had Family Members Who Recovered From Cancer	65
DK, NA	1
Total	100%

*Less than 0.5 per cent.

It is worth noting that those who go regularly for cancer checkups have often had considerably greater personal contact with cancer than those who do not go for physicals. Goers, also, are more likely, the survey revealed, to report knowing people — either in their family or outside their family — who have had cancer. And, similarly, these goers knew more cancer patients in the family and outside it who have recovered from cancer.

Although goers and non-goers describe themselves as "healthy," the goers see themselves as healthy because they do go for checkups. Non-goers, on the contrary, feel that since they are "healthy" there is no need for them to go for checkups. But fear plays a part here. One person gave as a reason for not going that "the doctor might find something wrong. What you don't know, won't hurt you, is my motto." A second stated there was little likelihood of going for a physical because, he said, "as long as I feel good and my health stays as good as it is I have no reason to go. I put my trust in God and when He is ready to take you, nothing can help you."

*Part three of a six-part series from American Cancer Society News Service Release.

**News Editor, American Cancer Society, Inc.

Maine Heart Association Notes

116 State Street, Augusta, Maine

Coronary Heart Disease And Carbohydrate Metabolism

. . . For nearly fifteen years, an almost embarrassingly high number of researchers boarded the "cholesterol bandwagon" in an approach of atherosclerosis. Fortunately, other fruitful approaches have been made possible in the past few years by identification of the fundamental role of such factors as triglycerides and carbohydrate metabolism in atherogenesis.

Recognition that study of atherosclerotic subjects should include evaluation of carbohydrate metabolism was prompted by epidemiologic analyses, which demonstrated high levels of blood glucose with significant frequency among persons with atherosclerosis . . . Ostrander and associates have described . . . a group of individuals with coronary heart disease and hyperglycemia. These subjects had significantly higher glucose tolerance indexes . . . and triglyceride concentrations than control groups . . . with coronary heart disease and normal blood glucose levels. . . .

. . . abnormal insulin responses should be included among the metabolic defects which may signify the presence of high-risk potential for the atherosclerotic process.

. . . Certain therapeutic implications may be inferred, however, from increasing evidence that atherosclerosis is related to more than one biochemical defect. . . . A single dietary program will not suffice for prophylaxis of all patients in the high-risk group. . . . Kuo studied 286 hyperlipidemic patients with clinical atherosclerosis. More than 90% . . . were found to have hyperglyceridemia, which was carbohydrate sensitive. . . . Use of a sugar-restricted, low-carbohydrate diet in these patients exerted a profound hypolipidemic effect.

Kuo's data indicate that sensitivity to simple carbohydrate is widespread among both healthy and atherosclerotic patients. . . . It is therefore incumbent upon the clinician to determine which of his patients . . . have fat-induced, carbohydrate-induced, or combined fat- and carbohydrate-induced hyperlipidemia. Prophylactic dietetic therapy can be prescribed only after an exact etiologic classification of hyperlipidemia is obtained.

Submitted by Jacob B. Dana, M.D., Maine Heart Association.

Reference — Editorial JAMA, Volume 201, pages 1040-1041, 1967.

The AMBAR SCRAPBOOK of

Obesity Oddities

FACT & LEGEND

CHARLES DICKENS'

"FAT BOY JOE"

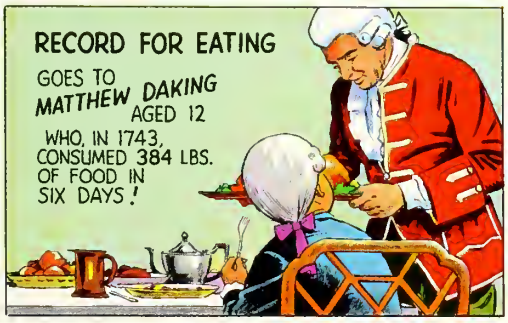
in Pickwick Papers

IS THE FIRST RECORDED CASE OF OBESITY WITH NARCOLEPSY

DR. C. SIDNEY BURWELL COINED THE TERM "PICKWICKIAN SYNDROME" IN 1955!



Obese Epitaph
in English graveyard





CONTROL FOOD AND MOOD ALL DAY LONG WITH A SINGLE MORNING DOSE

AMBAR #2 EXTENTABS®

methamphetamine HCl 15 mg.,
phenobarbital 64.8 mg. (1 gr.)
(Warning: may be habit forming).

One Ambar Extentab before breakfast can help control most patients' appetite for up to 12 hours. Methamphetamine, the appetite suppressant, gently elevates mood and helps overcome dieting frustrations. Phenobarbital, the sedative in Ambar, controls irritability and anxiety... helps maintain a state of mental calm and equanimity. Both work together to ease the tensions that erode the willpower during periods of dieting.

Also available: Ambar #1 Extentabs®—methamphetamine hydrochloride 10 mg., phenobarbital 64.8 mg. (1 gr.) (Warning: may be habit forming).

BRIEF SUMMARY/**Indications:** Ambar suppresses appetite and helps offset emotional reactions to dieting. **Contraindications:** Hypersensitivity to barbiturates or sympathomimetics; patients with advanced renal or hepatic disease. **Precautions:** Administer with caution in the presence of cardiovascular disease or hypertension. **Side Effects:** Nervousness or excitement occasionally noted, but usually infrequent at recommended dosages. Slight drowsiness has been reported rarely. See package insert for further details.

A. H. ROBINS COMPANY,
RICHMOND, VA. 23220

A·H·ROBINS



Help clear up that miserable stuffed-up feeling with Dimetapp. Each hard-working Extentab brings welcome relief from the stuffiness, drip and congestion of upper respiratory conditions for up to 10-12 hours. Yet, patients seldom experience drowsiness or overstimulation. The key to success is the Dimetapp formula: Dimetane (brompheniramine maleate)—along with phenylephrine and phenylpropanolamine, two time-tested decongestants. They get the job done . . . in a hurry.

Indications: Dimetapp is indicated for symptomatic relief of the allergic manifestations of respiratory illnesses, such as the common cold and bronchial asthma, seasonal allergies, sinusitis, rhinitis, conjunctivitis, and otitis.
Contraindications: Hypersensitivity to antihistamines. Not recommended for use during pregnancy.
Precautions: Until patient's response has been determined, he should be cautioned against engaging in operations requiring alertness. Administer with care to patients with cardiac or peripheral vascular diseases or hypertension.
Side Effects: Hypersensitivity reactions including skin rashes, urticaria, hypotension and thrombocytopenia, have been reported on rare occasions. Drowsiness, lassitude, nausea, giddiness, dryness of the mouth, mydriasis, increased irritability or excitement may be encountered.
Dosage: 1 Extentab morning and evening.
Supplied: Bottles of 100 and 500.

A.H. ROBINS COMPANY
RICHMOND, VA. 23220
A·H·ROBINS

in sinusitis, colds, U.R.I.
Dimetapp® Extentabs®
(Dimetane® [brompheniramine maleate], 12 mg.; phenylephrine HCl, 15 mg.; phenylpropanolamine HCl, 15 mg.)
up to 10-12 hours clear breathing on one tablet



The Journal of the Maine Medical Association

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Across The Desk

Home Grown Opportunity

There is a legend that's well known to all "old China hands" which has its counterpart in the literature of almost every culture of the world and it is certain that you've already heard at least one version. Three Chinese gentlemen, so the story goes, were talking years ago, about the world at large and the fortunes in it waiting to be picked up.

These men lived on a small island off the coast of China and they had seen the British trading ships sailing into Macao and Canton, and unlike many of their brethren, they were impressed with the wealth and mobility of the foreign barbarians. So, they sold their possessions and left their island and went into the service of the China Traders. One got to be a comprador, which is a spot half way up the ladder. The other two were lesser assistants. It was but a short few years before they returned to find their little island was now Hong Kong, the best deep water port in the Orient, and their land, a busy, growing city. The opportunities that were close at hand, although not recognized, were the best.

Perhaps there's a parallel to this fable in the New England Physicians Balanced Retirement Plan which combines the best of two mediums – mutual funds and a unique annuity. This has something for doctors of all ages; but in general, the longer one is in it, the better off he is. So, it has a special attraction for the younger physicians.

This New England doctors plan, set up by New England doctors for New England doctors, provides a practical flexible method of accumulating retirement funds. Both equity and guaranteed dollars – all facets of a plan individually drafted to the needs of the individual doctor.

A) Beacon Investing Corp. – A no-load mutual fund
B) Annuity at a guaranteed rate
C) All the Keogh tax-sheltered benefits may be incorporated in this plan

This is in no way to be construed as an advertisement. It is just an old Chinese fable in a modern setting.

Maine's Regional Medical Program

The Regional Medical Program, at the national level, grew out of recommendations of a Presidential Commission on Heart Disease, Cancer, and Stroke; the Commission (often referred to as the DeBakey Commission) made 35 recommendations aimed at reducing the toll of these diseases through the development of more effective means of making the latest medical advances available to a greater portion of the population. The major recommendations of the Commission are the basis for Public Law 89-239 passed by Congress in 1965. The intent of this Act is to assist physicians and allied professions in utilizing the rapid advances of scientific medicine in the prevention, diagnosis, treatment, and rehabilitation of patients afflicted with heart disease, cancer, stroke, and related diseases.

A basic principle of this legislation is that its purposes are best achieved through planning and implementation of innovative programs designed to deal with the diversity of needs, resources and patterns of education and service specific to a region. In recognition of this principle, a group of interested Maine health leaders began meeting informally in November, 1965 to discuss this state's participation in Public Law 89-239. This group decided that a new entity be established to serve as the applicant agency for a planning grant and on May 18, 1966, Medical Care Development, Inc. was duly chartered under the Laws of Maine as a private nonprofit corporation. The membership of Medical Care Development, Inc. consists of representation by health professionals, voluntary and official health agencies, hospitals, and the public.

Elected officers of the new agency are: Merle S. Bacastow, M.D., president; Richard C. Wardsworth, M.D., vice-president; George T. Nilson, M.P.H., secretary; Roswell P. Bates, D.O., treasurer. An application for a Regional Medical Program for Maine was submitted to the Public Health Service, Bethesda, Maryland and notice was received that a grant of $193,909 had been awarded effective May 1, 1967.

Necrology

Leslie W. Brownrigg, M.D.

1902-1967

Leslie W. Brownrigg, M.D., 65, of St. Stephen, New Brunswick died on May 17, 1967. He was born September 13, 1902 in Bocabel Cove, New Brunswick, the son of John S. and Susiey Brownrigg.

Dr. Brownrigg graduated from Mount Allison University in 1927 and received his medical degree from McGill University Faculty of Medicine in 1932. He interned at the St. John General Hospital in New Brunswick from 1932 to 1933. Dr. Brownrigg established a practice in St. Stephen in 1933 and served the St. Croix area for over thirty-three years.

In 1966, a testimonial dinner was given at the Legion Hall in St. Stephen, N. B. in honor of his retirement from practice and in paying tribute to Dr. Brownrigg the testimonial speaker said: "I am here to say thank you for the sacrifice, thank you for those who have seen and experienced your work, for those who have known your care in the little splinters of discomfort and in the great extremities of sickness, for those whose closing were tended by your vigilance, for those whose breath began in your hands, for those who would not be here at all without the service you rendered at some critical time, for those who cannot be here though their good wishes are — in short, for those countless people who have relied on you to serve them and their loved ones."

Dr. Brownrigg was a member of the Maine Medical Association, the Washington County Medical Society, the American Medical Association, the Graduates Society of McGill University, and the Montreal Medico-Chirurgical Society. He was also a past president of the St. Croix Medical Association and the New Brunswick Branch of the Canadian Medical Association, a member of the advisory board of the Charlotte County Hospital and of the Ganong Home in St. Stephen and had represented the New Brunswick Medical Society on the Government Advisory Committee on hospital services until his retirement in 1966.

Surviving are his widow, the former Annie Phillips of Southampton; two daughters, Miss Sylvia Brownrigg of St. Stephen, New Brunswick and Mrs. Stuart Mills of Nashwaaksis, New Brunswick, three sisters and two brothers.

County Society Notes

HANCOCK

The Hancock County Medical Society met at the Brookside Restaurant in Ellsworth, Maine on September 13, 1967.

Paul S. Hill, Jr., M.D., President of the Maine Medical Association, discussed problems of organized medicine in Maine and the United States.

A letter from the Washington County Medical Society was read concerning their stand on the present Maternal and Infant Care Program of the State of Maine, Department of Health and Welfare.

A resolution submitted by Eliot T. Stadler, M.D. to establish standards of pre-school and school health programs was referred to a committee composed of Drs. Stadler, Bradley E. Brownlow and Randall H. Silver.

Otis F. Jillson, M.D., dermatologist from Bangor, was the guest speaker. He presented interesting examples with common dermatological problems.

Bradley E. Brownlow, M.D., *Secretary Pro tem*

PISCATAQUIS

A meeting of the Piscataquis County Medical Society was held on September 20, 1967 at Dr. Linus J. Stitham's camp in Sebec, Maine. Following a steak cookout, a business meeting of the Society and the County Society Auxiliary was held. The Society was honored by colleagues from Orono, Bangor and Portland.

Asa C. Adams, M.D., President-elect of the Maine Medical Association, brought greetings from the President, Paul S. Hill, Jr., M.D., who was unable to attend. Dr. Adams reported the lack of interest that Maine doctors have in joining and contributing to AMPAC.

Dr. Stitham, Councilor for the Sixth District, reported on the situation in Washington County in reference to the Maternal and Infant Care Program. The House of Delegates in June voted against the program as presented by the State of Maine, Department of Health and Welfare.

At this meeting the members present discussed the question of establishing three-year nursing schools. It was decided to have the Maine Medical Association approach the Nurses' Association in reference to this matter, to get their cooperation and then approach the Legislature for funds.

The following officers were elected for 1967-1968:

President, Charles H. Lightbody, M.D., Guilford
Vice-President, Araminta M. Rodriguez, M.D., Milo
Secretary-Treasurer, Isaac Nelson, M.D., Greenville
Delegate to the M.M.A. House of Delegates: Charles H. Lightbody, M.D. Alternate: John B. Curtis, M.D., Milo
Legislative Committee, Francis W. Bradbury, M.D., Dover-Foxcroft
Censor, George C. Howard, M.D., Guilford

Isaac Nelson, M.D., *Secretary*

KENNEBEC

A meeting of the Kennebec County Medical Association was held at the Holiday Inn in Augusta, Maine on September 21, 1967. The meeting was called to order by the President, Robert L. Ohler, M.D.

Francis J. O'Connor, M.D. discussed plans of the Augusta General Hospital group regarding continuing medical education and suggested further education on a State level through Maine's Regional Medical Program.

Kevin Hill, M.D. discussed a recent advertisement in the Waterville Morning Sentinel regarding information on post tonsillectomy bleeding. The telephone number mentioned in the advertisement was that of an attorney in Waterville. Dr. Hill also discussed plans by chiropractors relative to inclusion in the Medicare Bill.

Following the business meeting, there was an extended discussion by Harold J. Kosasky, M.D., instructor at Harvard Medical School, regarding the use of progestins in obstetrics and gynecology.

LUCIEN F. VEILLEUX, M.D., *Secretary*

OXFORD

The Oxford County Medical Society met at Bethel Inn in Bethel, Maine on October 4, 1967.

The following officers were elected for 1967-1968:

President, Linwood M. Rowe, M.D., Rumford
Vice-President, Walter G. Dixon, M.D., Norway
Secretary-Treasurer, Hagop Halladjian, M.D., Rumford
Delegates to the M.M.A. House of Delegates: Linwood M. Rowe, M.D. (1 yr.) and Harry L. Harper, M.D., South Paris (2 yrs.) Alternates: Dexter E. Elsemore, M.D., Dixfield (1 yr.) and Joelle C. Hiebert, Jr., M.D., Norway (2 yrs.)
Councilors: Dexter E. Elsemore, M.D., (1 yr.), Henry M. Howard, M.D., Rumford (2 yrs.) and Ake Akerberg, M.D., South Paris (3 yrs.)

William E. Schumacher, M.D., Director of the Bureau of Mental Health in Augusta, Maine, discussed the mental health problems in Oxford County.

WALTER G. DIXON, M.D., *Secretary*

CUMBERLAND

The Cumberland County Medical Society met on September 21, 1967 at Valle's Steak House in Portland, Maine with approximately seventy members and guests attending.

Paul S. Hill, Jr., M.D., President of the Maine Medical Association, spoke briefly, particularly encouraging physicians to be active in non-medical community affairs. Charles R. Glassmire, M.D. announced the recent bequest to the Maine Medical Education Foundation, and that the Maine Medical Association had gone on record as favoring fluoridation of water supplies. He stated that the proposed Caribbean cruise might be in the fall or winter of 1969. He cautioned the membership to be on the alert for HR 6418 which concerns planning for health facilities and for another bill concerned with the quality of health care. Laban W. Leiter, M.D. presented a resolution on the death of William C. Burrage, M.D.

Charles W. Capron, M.D. asked for a show of hands of those who might be interested in the Caribbean cruise: 5 or 6 persons responded. Dr. Capron announced the membership of a committee to prepare a brochure for the orientation of new physicians in the area; Drs. Stanley B. Sylvester, Chairman, Albert Aranson, Robert H. Pawle and Robert W. Agan. Considerable discussion took place regarding the Maternal and Infant Care Program of the Department of Health and Welfare, with the comments reflecting previously expressed opposition to the program. Criticism was expressed of the extension of the program into Cumberland County.

Clement A. Hiebert, M.D. described his recent trip to Brazil with Governor Kenneth M. Curtis in behalf of the Partners of the Alliance for Progress. He stressed the impoverished conditions he found and particularly the backward state of medical education and care. After showing colored slides, he suggested opportunities for helping "our sister state" such as inviting Brazilian physicians to Maine for brief training periods, sending them surplus medical equipment and books, and actual visits by Maine physicians to Brazil.

STANLEY B. SYLVESTER, M.D., *Secretary*

News, Notes and Announcements

Dr. Ervin Receives Roselle W. Huddilston Award

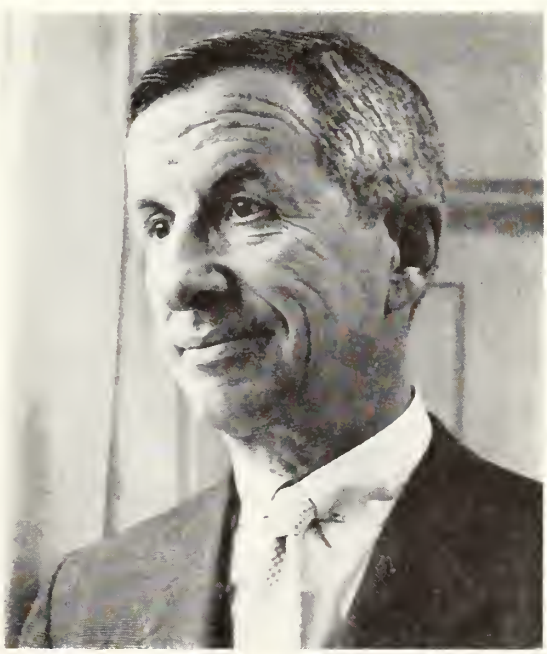
Edmund N. Ervin, M.D., Waterville, was named 1967 Roselle W. Huddilston Medalist at the annual meeting of the Maine Tuberculosis and Health Association on October 11.

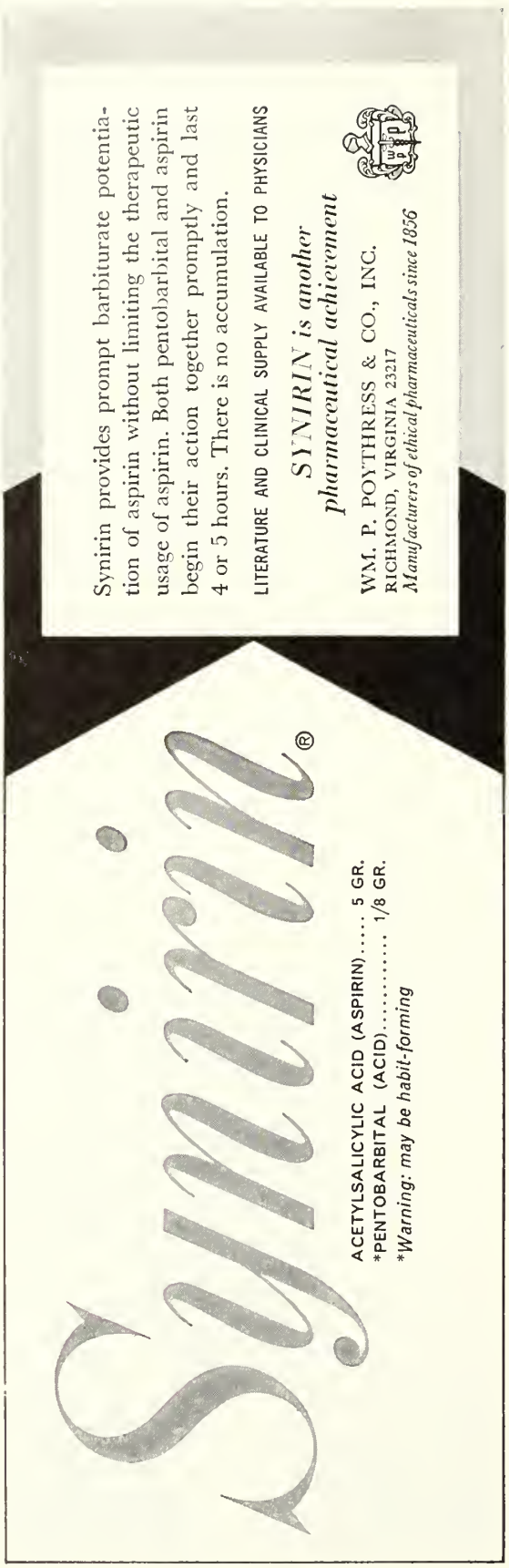
The Huddilston Medal, Maine's oldest health award of its kind, is given annually to a citizen of the state for outstanding service in the general field of health to the people of the State of Maine. Dr. Ervin is the 10th recipient. Although the services recounted in qualifying Dr. Ervin as Medalist were broad in nature, it was his work in the field of mental retardation which was considered most exceptional.

The Medal was presented to Dr. Ervin by Brinton T. Darlington, M.D., in behalf of the Association.

Elected as new Association officers at the annual sessions were: Marion K. Moulton, M.D., West Newfield, president; Kenton E. Quint, North Anson, president-elect; Lloyd Brown, M.D., Bangor, Elmer L. Mitchell, Manchester, and Bradley E. Brownlow, M.D., Blue Hill, vice presidents; Harold L. Jones and Alonzo H. Garcelon, D.D.S., both of Augusta, treasurer and assistant treasurer respectively.

Lloyd Brown, M.D., was elected president of the Maine Thoracic Society, with Emerson H. Drake, M.D., Portland, elected vice-president, and Bradley E. Brownlow, M.D., secretary.





Letters to the Editor

To the Editor:

Patient's Share of Charges for Repeated Admissions

1. Successive hospital admissions for hemodialysis, and similar recurring procedures, may be considered as one hospital admission.

2. Within this concept, all hospital admissions of an obstetrical patient required for the proper management of that pregnancy will be considered as one hospital admission for the purpose of determining patient's share of the charge.

3. Further, any patient that requires successive hospital admissions for a recurrence of the same condition within 30 days will be considered as one hospital admission for the purpose of determining patients' share of charges within the framework of this concept.

4. The above policy will be applied retroactively to 1 January 1967.

NORMAN E. PEATFIELD
Brigadier General, MC, USA
Executive Director
Office for the Civilian Health and
Medical Program of the Uniformed Services

To the Editor:

Demerol Across The Border

During a recent trip back to Maine from EXPO, an incident occurred while crossing the border which leads me to write this letter, in the belief that it may be of value to other physicians in Maine.

While going through customs, the inspector noticed my physicians' bag and asked if I had any narcotics. My simple, straightforward answer, "yes," got me in more difficulty than I imagined. I had no idea that a physician would not be allowed to carry his medical bag with all of its usual supply of narcotics back and forth across the border, and I was very surprised that this is not allowed.

The actual purpose of this letter to you is to publicize the fact that narcotics are not transportable across the border between Canada and the United States, and to help fellow physicians avoid the delay and trouble I ran into.

Maine M.D.

To the Editor:

The following was read by me at a meeting of the Portland Chapter of the D. A. V. at the end of a meeting held at Bosworth Hall, Wednesday, evening Sept. 21, in a continuing effort to curtail the death and disablement caused by smoking.

For over thirty years, I have been saying nobody can afford to smoke, for smoking causes cancer of the mouth, larynx, bronchi and lungs, and adds to our terrific death rate from heart disease and emphysema and it is an addiction which is so hard to break after the habit is once established. Millions of Americans are slaves of the tobacco interests and some young persons are voluntarily beginning such slavery every day.

This year, more than 150,000 will die because they smoke. This statement cannot be successfully denied by those who are in the know, though it is not yet generally known. I have for thirty years been trying to make young and old stop smoking but I still feel like a lamb bleating in the face of a killing blizzard, for the millions of dollars spent in newspapers, magazines, on T.V., and on radio advertising deeply snows over all that, I so ineffectually say as a lone M.D. in isolated Maine.

I have said since 1934 nobody can afford to smoke, but radio, T.V. and newspaper advertisers have me pushed way out of sight and each day many MISGUIDED YOUNG PEOPLE begin to smoke. What I write, is often not published for there is no money or organized support back of me.

I am sure no progress can be made in stopping the 150,000 a year death rate due to smoking of cigarettes, cigars, and pipes, until people are no longer exposed to the expert advertising done by selfish interests who incessantly promote smoking in every way possible and every day.

To require T.V. programs to give some anti-smoking data is a step in the right direction.

Why do newspapers, the T.V., the Radio, and other advertising medias take such ill gotten money? Why do they continue to mislead the public? Why do some newspaper editors never print letters I send to them which takes too little space, but tries to tell the people the real truth and which will keep some misguided young people from being killed by their smoking. Their own money is used by the tobacco interest to keep them from quitting. Why stimulate more young people to travel the wrong road? Why not tell them that in 1967, 150,000 smokers will die because they smoke? Why let anyone commit a slow suicide or die prematurely?

What I have been saying for over thirty years is still so true, "smoking is never good for ones health and *nobody can afford* to smoke." A word to the wise should be sufficient. Many have quit smoking, but many more should. Only 30% of the M.D.'s now smoke for they read the writings on the wall, and know they must quit smoking to live long or be happy.

I continue to speak and write against smoking for right after World War I, I was for two and a half years a patient in the chest wards of army hospitals. There, I saw several good friends die from lung cancer. Since every one of them was a smoker, therefore, I concluded the two were related, and this belief has always remained unshaken. Some of the victims themselves were of the same opinion.

After I received my M.D. degree, for five years I took smoking histories on all cases diagnosed lung cancer who were in the skin and cancer hospitals in which I was studying full time. During those five years, I saw many die terrific deaths from lung cancer. *All* of them were smokers.

In 1930, I was also led to believe that heart disease and smoking were closely related for one of my instructors in Washington University Medical School, St. Louis was of that belief. I was the only one in the class who felt sure he was right for most every other member of the class was a smoker.

In 1934, I asked a newspaper clipping bureau to send me each week all clippings that were against smoking. I have been getting them every week through all the years ever since. In thirty-three years, the clippings have piled up and I have read them all. This last week I got 41 clippings. They all tend to prove that nobody can afford to smoke.

Though there has been a great inability on the part of many smokers to stop smoking, I am glad to say that physicians have been able to do so. Late statistics say that only 30% now smoke. They stop because they know the cancer-producing effects better than their patients do and they know smoking causes heart disease and even cancer of the bladder. They know, too, that death from cancer of the lung is a terrible death and only a very small percentage are saved by the removal of one lung, in order to save the patient. Frequently, both lungs are affected.

It is such a tragedy, when a patient dies of a disease he or she could have prevented by simply cutting out a bad habit, like smoking. Almost 30 years ago, I said smoking should be called an addiction, for it is that in most smokers. Now many others call it an addiction. If it were not an addiction, every day more people would stop smoking and stay stopped.

I am of Holland Dutch blood 100% and true to my inheritance, I keep believing and saying that young and old must be convinced that cigarette smoking is decidedly harmful and that

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Usual Children's Dose: One or two teaspoonfuls three times daily.

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Fort Washington, Pa.

a sure way to save ones life or prolong it is to simply stop smoking. If one continues to smoke, that habit daily nags at his vitality and may eventually cause his death if he does not die from an accident or an acute illness. We Dutch have tenacity and perseverance – even when we seem to make no progress, and our stand is unpopular and unconvincing, so I keep repeating this, and my other deep conviction, which I began preaching twenty-five years ago, when on the Nation Staff of the American Red Cross, "Slow down and live," and "slower driving means a lower death rate." Fifty-four thousand will die in '67 because the legal speed limits are too high and we drive too much, and too fast, but three times as many will die this year because they are addicted to smoking. I am now retired, but I still try to prevent needless death and suffering caused by smoking and too fast driving.

ADRIAN H. SCOLTEN, M.D.
Portland, Maine 04101

STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION

(Act. of October 23, 1962; Section 1369, Title 39, United States Code)

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7. Owner (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual must be given.)
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2. Mail subscriptions	62	66
C. Total Paid Circulation	62	66
D. Free Distribution (including samples) by mail, carrier or other means	1216	1235
E. Total Distribution (Sum of C and D)	1278	1301
F. Office Use, Left-Over, Unaccounted, Spoiled After Printing	20	25
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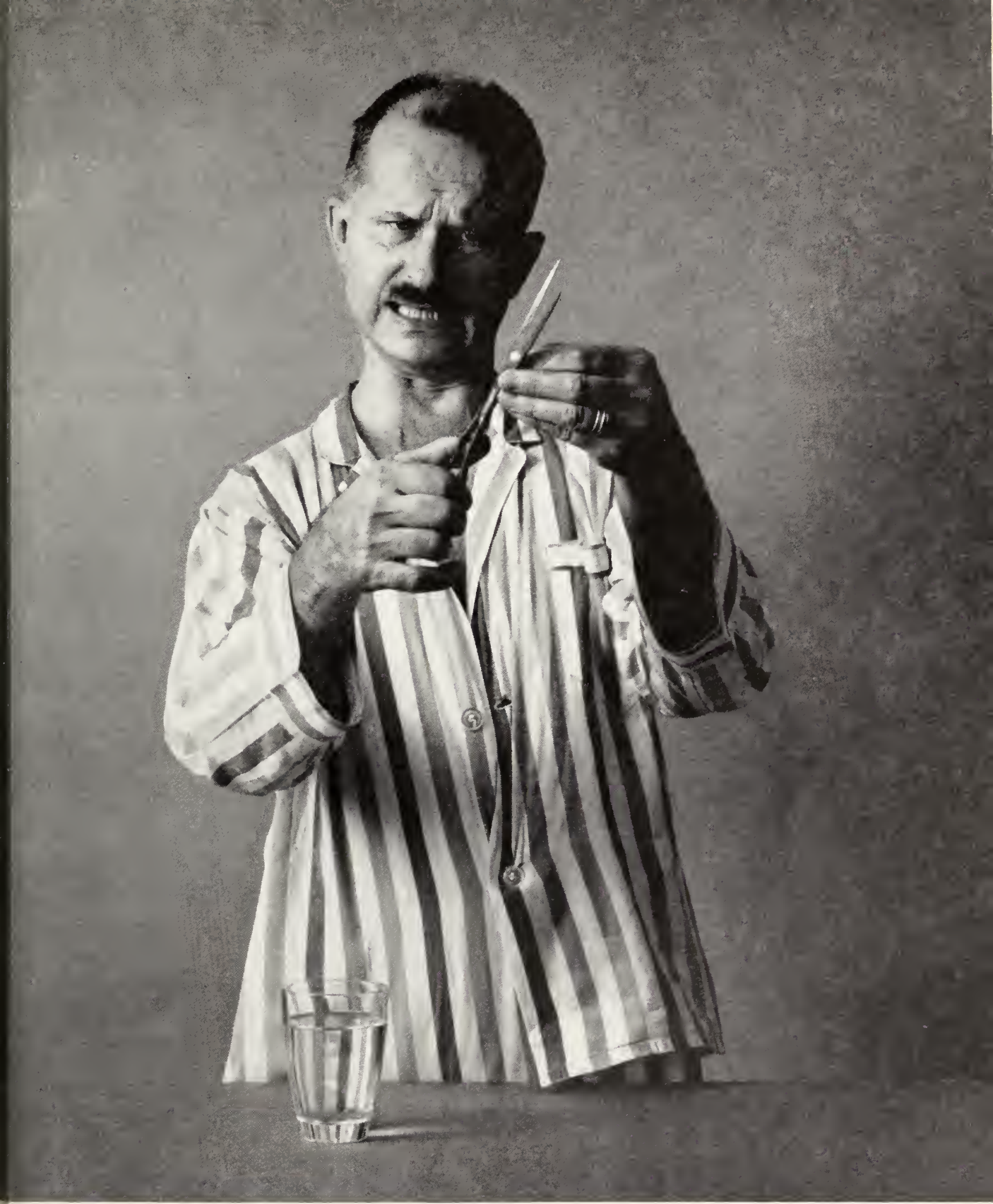
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Maybe your patients complain:
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ease see brief prescribing summary at the end of advertisement.



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ions: Hypertension and many types of
involving retention of salt and water.

indications: Hypersensitivity and most
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g: With the administration of enteric-
potassium supplements, which should
d only when adequate dietary supple-
ion is not practical, the possibility of
bowel lesions (obstruction, hemor-
and perforation) should be kept in
Surgery for these lesions has fre-
y been required and deaths have oc-
. Discontinue enteric-coated potas-
upplements immediately if abdominal
distention, nausea, vomiting, or gastro-
nal bleeding occur.

th caution in pregnant patients, since
g may cross the placental barrier and
e reactions which may occur in the
thrombocytopenia, hyperbilirubinemia,
carbohydrate metabolism, etc.) are
ial problems in the newborn.

tions: Antihypertensive therapy with
on should always be initiated cau-
in postsympathectomy patients and
ents receiving ganglionic blocking
or other potent antihypertensive drugs,
are. Reduce dosage of concomitant
pertensive agents by at least one-half.
urates, narcotics or alcohol may po-
e hypotension. Because of the possi-
of progression of renal damage, peri-
etermination of the BUN is indicated.
ntinue if the BUN rises or liver dysfunc-
aggravated. Hepatic coma may be
itated.

olyte imbalance, sodium and/or potas-
epletion may occur. If potassium deple-
ould occur during therapy, Hygroton
be discontinued and potassium sup-
nts given, provided the patient does
ve marked oliguria.

pecial care in cirrhosis or severe
ic heart disease and in patients re-
g corticosteroids, ACTH, or digitalis.
striction is not recommended.

se Reactions: Nausea, gastric irritation,
ng, anorexia, constipation and cramp-
izziness, weakness, restlessness, hy-
cemia, hyperuricemia, headache, mus-
amps, orthostatic hypotension, aplastic
a, leukopenia, thrombocytopenia,
ulocytosis, impotence, dysuria, transient
a, skin rashes, urticaria, purpura, nec-
g angiitis, acute gout, and pancreatitis
epigastric pain or unexplained G.I.
oms develop after prolonged adminis-
n. Other reactions reported with this
of compounds include: jaundice, xan-
ia, paresthesia, and photosensitization.

ge Dosage: One tablet with breakfast
or every other day.

ability: White, single-scored tablets of
g. and aqua tablets of 50 mg., in bot-
f 100 and 1000. (B)46-230-D

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ribing information.**

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His teen-age granddaughter won't invite friends home because of his outbursts.



for moderate to severe anxiety

Mellaril®
(thioridazine)
25 mg. t.i.d.

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Anxiety that *seriously interferes* with the individual's performance at work, at home, or in the community may be regarded as *moderate to severe* in degree.

Mellaril often recommends itself to the treatment of moderate to severe anxiety because it

- helps control the most frequent symptoms: marked tension, agitation, apprehension, restlessness, hypermotility
- often alleviates anxiety-induced somatic complaints
- frequently helps strengthen emotional resources
- helps the patient maintain realistic contact with environment, closer harmony with family

Thus, when you consider the anxiety moderate to severe... consider Mellaril.

Contraindications: Severely depressed or comatose states from any cause, and in association with or following MAO inhibitors; severe hypertensive or hypotensive heart disease.

Precautions: Hypersensitivity reactions (e.g., leukopenia, agranulocytosis) and convulsive seizures are infrequent. Pigmentary retinopathy has been observed where doses in excess of those recommended were used for long periods of time. May potentiate central nervous system depressants, atropine, and phosphorus insecticides. Where complete mental alertness is required, administer the drug cautiously and increase dosage gradually. In addition, orthostatic hypotension (especially in female patients) has been observed. Epinephrine should be avoided in treatment of drug-induced hypotension.

Side Effects: Pseudoparkinsonism and other extrapyramidal disorders are infrequent; drowsiness, especially in high doses early in treatment, may occur; nocturnal confusion, dryness of the mouth, nasal stuffiness, headache, peripheral edema, lactation, galactorrhea, and inhibition of ejaculation are noted on occasion; photosensitivity and other allergic skin reactions may occur but are extremely rare.

Before prescribing, see package insert for full product information.

for moderate to severe anxiety

Mellaril®
(thioridazine)
25 mg. t.i.d.

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- EMPHYSEMA
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- BRONCHIECTASIS

The fast-disintegrating uncoated tablet gives relief in 15 minutes

Each tablet contains:

Potassium Iodide	195 mg.
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Precautions: Usual for aminophylline-ephedrine-phenobarbital. Iodides may cause nausea, long use may cause goiter. Discontinue if symptoms of iodism develop.

Iodide contraindications: tuberculosis, pregnancy.

DOSAGE

One tablet, with full glass of water, 3 or 4 times daily.

Dispensed in bottles of 100 and 1000 tablets.

MUDRANE GG—Formula, dosage and package identical to Mudrane—*except*—100 mg. glyceryl guaiacolate replaces the potassium iodide. The value of Mudrane cannot be enjoyed by a small group in which K.I. is contraindicated. Mudrane GG is prepared for this group.

MUDRANE GG ELIXIR—Four 5 cc teaspoonfuls is equivalent to one Mudrane GG tablet. Dosage adjusted to age and weight of child. Mudrane GG Elixir is for pediatric patients and those who think they cannot swallow tablets. Dispensed in pint and half gallon bottles.

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Paraflex® (chlorzoxazone)* 250 mg.
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Parafon Forte helps to relieve pain, restore mobility . . . stop pain-spasm feedback

Here is why. PARAFON FORTE provides:

nonsalicylate analgesic equal to aspirin for the relief of pain,[1,2] yet unlikely to produce the irritation to the gastric mucosa so often associated with salicylate therapy[3]

and a skeletal muscle relaxant shown to have up to a 6-hour span of action,[4-6] and to retain effectiveness even on continued administration,[5-7] but which does not have the central effects of tranquilizing compounds.

Prescribe PARAFON FORTE for lasting spasmolysis and analgesia in sprains, strains, myalgias, low back pain, bursitis and other musculoskeletal disorders. Your patients will appreciate the restored comfort and lasting freedom of movement it usually provides.

Cautions and side effects: Use with caution in patients with known drug sensitivity. If a hypersensitivity reaction or symptoms suggestive of liver dysfunction are observed, the drug should be stopped. Occasionally, drowsiness, dizziness, lightheadedness, malaise, overstimulation or gastrointestinal disturbances may be noted; rarely gastrointestinal bleeding, allergic skin rashes, petechiae, ecchymoses, angioneurotic edema or anaphylactic reactions may have been drug associated. While *Paraflex* (chlorzoxazone) has been suspected as being the cause of hepatic toxicity in approximately eighteen patients, it was not possible to state that the dysfunction was or was not drug induced. *Dosage:* Two tablets q.i.d. *Supplied:* Scored, light green tablets, imprinted "McNEIL"—bottles of 100.

References: 1. Batterman, R. C., and Grossman, A. J.: Fed. Proc. *14*:316, 1955. 2. Goodman, L. S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 3, New York, The Macmillan Company, 1965, p. 331. 3. Roth, J. L. A., *et al.*: Gastroenterology *44*:146, 1963. 4. Conney, A. H., and Burns, J. J.: J. Pharmacol. Exp. Ther. *128*:340, 1960. 5. Settel, E.: Clin. Med. *6*:1373, 1959. 6. Berman, H. H., *et al.*: Dis. Nerv. Syst. *25*:430, 1964. 7. Darienzo, C.: Ibid., *27*:189, 1966.

*U. S. PATENT NO. 2,895,877

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The maintenance dosage of DECLOMYCIN can be kept at this convenient schedule because of its unusually high effective blood and tissue levels.

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In clinical practice, blood levels produced by therapeutic dose of DECLOMYCIN are high, prolonged, and effective; because of high serum binding and slow renal clearance. And if there's a broader susceptibility pattern of organisms, we've yet to see it.

There is no need to give higher daily dosage than 300 mg b.i.d., except in venereal diseases and Eaton Agent pneumonia.

DECLOMYCIN®
DEMETHYLCHLORTETRACYCLINE

Lederle

Prescribing information on next page.

b.i.d. The sensible schedule that covers the patient day and night

DECLOMYCIN Demethylchlortetracycline should be equally or more effective therapeutically than other tetracyclines when the offending organisms are tetracycline-sensitive.

Contraindication: History of hypersensitivity to demethylchlortetracycline.

Warning—In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated, and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions—Overgrowth of nonsusceptible organisms may occure. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects—Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes. A rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN apparently dose related. Transient increase in urinary output, sometimes accompanied by thirst (rare). Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth— dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs discontinue medication and institute appropriate therapy.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

In the treatment of syphilis a dosage schedule of a total of 12 to 18 Gm given in equally divided doses over a period of 10 to 15 days should be followed. Close follow-up observation of the patient is recommended including appropriate laboratory tests, since demethylchlortetracycline has not had adequate evaluation in all stages of syphilis. Spinal fluid examination should be included as part of this follow-up.

Acute gonococcal anterior urethritis in males has been treated effectively with a single dose of 600-900 mg. of DECLOMYCIN Demethylchlortetracycline. Individuals unable to tolerate large single doses due to gastrointestinal side effects may be treated with 150 mg. every 6 hours for a minimum of 4 doses or 300 mg. every 12 hours for a minimum of 2 doses. Females should be treated with a dosage of 150 mg. every 6 hours or 300 mg. every 12 hours until a cure is effected.

Primary Atypical Pneumonia (Eaton Agent): The average adult daily dosage is 900 mg. in 3 divided doses for six days.

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Diagnosis:

cystitis?
pyelonephritis?
pyelitis?
urethritis?
prostatitis?

in any case,
usually gram-negative*

Therapy:

two 500 mg. Caplets® q.i.d.
(initial adult dose)

cations: Urinary tract infections caused by gram-negative and some gram-tive organisms.

effects: Mainly mild, transient gastrointestinal disturbances; in sional instances, drowsiness, fatigue, pruritus, rash, urticaria, mild nophilia, reversible subjective visual disturbances (overbrightness of s, change in visual color perception, difficulty in focusing, decrease in al acuity and double vision), and reversible photosensitivity reactions. ed overdosage, coupled with certain predisposing factors, has produced convulsions in a few patients.

autions: As with all new drugs, blood and liver function tests are advis- during prolonged treatment. **Pending further experience, like most notherapeutic agents, this drug should not be given in the first trimester egnancy. It must be used cautiously in patients with liver disease** or **re impairment of kidney function.** Because photosensitivity reactions have rred in a small number of cases, patients should be cautioned to avoid cessary exposure to direct sunlight while receiving NegGram, and if a tion occurs, therapy should be discontinued. The dosage recommended dults and children should not arbitrarily be doubled unless under the ful supervision of a physician. Bacterial resistance may develop.

n testing the urine for glucose in patients receiving NegGram, Clinistix® gent Strips or Tes-Tape® should be used since other reagents give a -positive reaction.

ge: Adults: Four Gm. daily by mouth (2 Caplets® of 500 mg. four times) for one to two weeks. Thereafter, if prolonged treatment is indicated, dosage may be reduced to two Gm. daily. Children may be given oximately *25 mg. per pound* of **body weight per day, administered in ded doses. The dosage recommended above for adults and children ld not arbitrarily be doubled unless under the careful supervision of a ician. Until further experience is gained, infants under 1 month ld not be treated with the drug.**

supplied: Buff-colored, scored Caplets® of **500 mg. for adults,** conve- tly available in bottles of 56 (sufficient for one full week of therapy) and in les of 1000. **250 mg. for children,** available in bottles of 56 and 1000.

erences: (1) Based on 23 clinical papers, 1512 cases. Bibliography on est. (2) Bush, I. M., Orkin, L. A., and Winter, J. W., in Sylvester, J. C.: microbial Agents and Chemotherapy—1964, Ann Arbor, American iety for Microbiology, 1965, p. 722.

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eradicates most urinary tract infections...

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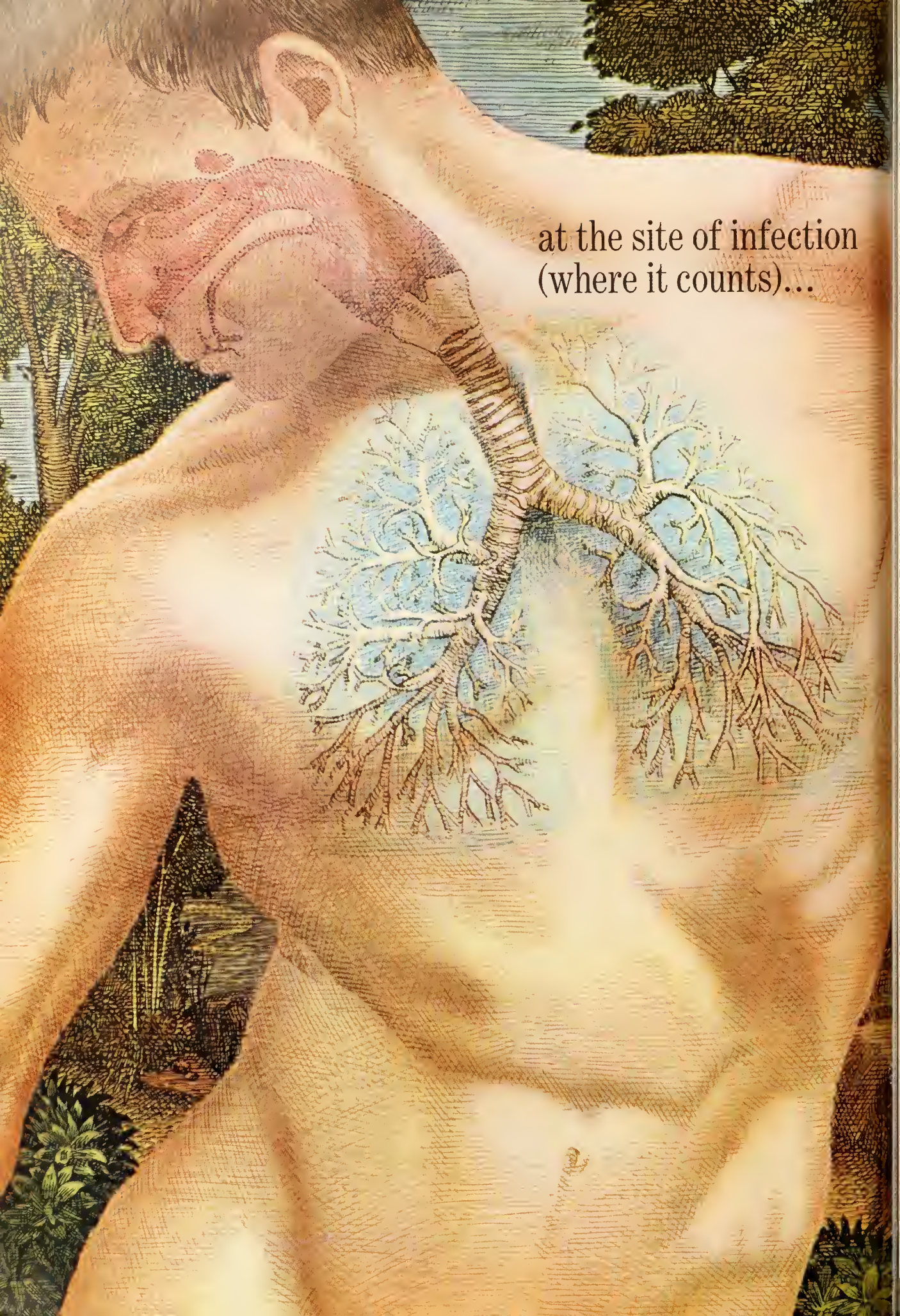
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References: 1. Shumon, C.: Am. J. Med. Sci., 225:54, 1953. 2. Perchuk, E., et al.: Angiology, 12:102, 1961. 3. Rowls, W., et al.: Med. Times, 87:818, 1959.

6/67 Q-706A


at the site of infection
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Acid stable, better absorbed... Ilosone produces faster, higher, more prolonged blood levels, even in the presence of food[1-3]

Because it is the most active form of oral erythromycin, Ilosone can help assure consistently greater antibacterial activity at the site of infection. Ilosone produces peak antibacterial blood levels two to four times those of other erythromycin preparations.[1,2] Not only are these levels attained earlier, but they are maintained for much longer periods. Even the presence of food does not seem to affect the activity of Ilosone.[1,3]

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Ilosone has shown no cross-resistance with penicillin and may be effective against organisms that have become resistant to that agent. Despite its high antibacterial activity, Ilosone has demonstrated a low incidence of side reactions. Blood dyscrasias, ototoxicity, and tooth staining have not been observed. Infrequent cases of drug idiosyncrasy, manifested by a cholestatic jaundice, have occurred, but there have been no known definite residual effects.

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Indications: Ilosone is indicated in infections caused by micro-organisms sensitive to its action—especially staphylococci, hemolytic streptococci, and pneumococci.

It has been effective in streptococcus infections, particularly acute bacterial pharyngitis and tonsillitis; staphylococcus disease, including soft-tissue infections, furunculosis, abscesses, cellulitis, carbuncles, and wound infections; pneumococcus pneumonia and acute bronchitis with pneumococci on culture, bronchopneumonia, and otitis media.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents; surgical procedures should be performed when indicated, and large doses of the antimicrobial agents should be employed.

Penicillin is the drug of choice for syphilis and gonorrhea, but Ilosone in multiple 500-mg. doses has been useful in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Known history of sensitivity to this drug; preexisting liver disease or dysfunction.

Adverse Reactions: Hepatic dysfunction with or without clinical jaundice has been reported infrequently. Changes in liver function tests indicative of intrahepatic cholestasis appear to be the result of individual idiosyncrasy. Findings subsided when treatment was discontinued. Occasionally, symptoms simulated extrahepatic obstructive jaundice or the colic of biliary tract disease.

When jaundice appeared to be related to use of the drug, laboratory findings were characterized by increased direct-reacting bilirubin, elevated alkaline phosphatase levels, negative or weakly positive cephalin flocculation and thymol turbidity tests, elevated serum glutamic oxalacetic transaminase levels, peripheral eosinophilia, and normal cholecystograms.

Gastro-intestinal disturbances not associated with hepatic effects and occasional allergic manifestations (urticaria, skin eruptions, and, rarely, anaphylaxis) have been reported. The normal intestinal gram-negative bacterial flora is not appreciably altered by erythromycin drugs.

Administration and Dosage: Ilosone is administered orally.

Infants and children under twenty-five pounds, 5 mg. per pound every six hours; twenty-five to fifty pounds, 125 mg. every six hours. Adults and children over fifty pounds, 250 mg. every six hours.

For severe infections, double the dosage. When larger doses are indicated, consider parenteral erythromycin therapy. In beta-hemolytic streptococcus infections, maintain treatment for ten days to prevent rheumatic fever or glomerulonephritis.

In syphilis, a total of 20 to 30 Gm. is administered in divided doses for ten to fifteen days. Close follow-up is necessary since erythromycin drugs have not had adequate evaluation in all stages of syphilis. Examination of spinal fluid is recommended during follow-up.

In gonorrhea, the dosage is 500 mg. four times a day for four days. Patients with a suspected lesion of syphilis should have a dark-field examination before receiving antibiotics and monthly serologic tests for three months. For detailed information, consult the package literature.

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Ilosone Drops, 5 mg.* per drop.

Tablets Ilosone Chewable, N.F., 125 mg.*

*Base equivalent. [080967]

References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:69, 1964. 2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:398, 1962. 3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198, 1960.

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Dosage: Adults—1 tablet, swallowed whole to preserve timed-release feature, in morning, midafternoon and at bedtime. Side effects: Occasional drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. Precautions: The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

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Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently. Large doses of Butazolidin alka are contraindicated in glaucoma.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Instances of severe bleeding have occurred. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Before prescribing, carefully select patients, avoiding those responsive to routine measures as well as contraindicated patients. Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should not exceed recommended dosage, should be closely supervised and should be warned to discontinue the drug and report immediately if fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage occur. Make regular blood counts. Discontinue the drug immediately and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The most common are nausea, edema and drug rash. Swelling of the ankles or face may be minimized by withholding dietary salt, reduction in dosage or use of diuretics. In elderly patients and in those with hypertension the drug should be discontinued with the appearance of edema. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. The patient should be instructed to take doses immediately before or after meals or with milk to minimize gastric upset. Mild drug rashes frequently subside with reduction of dosage. However, rash accompanied by fever or other systemic reactions usually requires withholding medication. Purpuric rash has also been reported. Agranulocytosis, exfoliative dermatitis, Stevens-Johnson syndrome, or a generalized allergic reaction similar to serum sickness may occur and require permanent withdrawal of medication. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported. While not definitely attributable to the drug, a causal relationship cannot be excluded. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

Dosage in Acute Superficial Thrombophlebitis: Initial: 6 capsules or tablets daily in divided doses for 2 or 3 days. Maintenance: 3 capsules or tablets daily. Usual duration of therapy is 5 to 7 days (rarely beyond 10 days). 6509-V(B)R2

*Stein, I.D.: Presented at the American Academy of General Practice, Dallas, Sept. 1967.

For complete details, please see full prescribing information.

it used to take weeks



Acute superficial thrombophlebitis before treatment



After 5 days of Butazolidin therapy

In acute superficial thrombophlebitis, patients were usually bedfast for 2 to 4 weeks, tying up hospital beds, requiring costly nursing care and time-consuming procedures such as warm soaks and packs.

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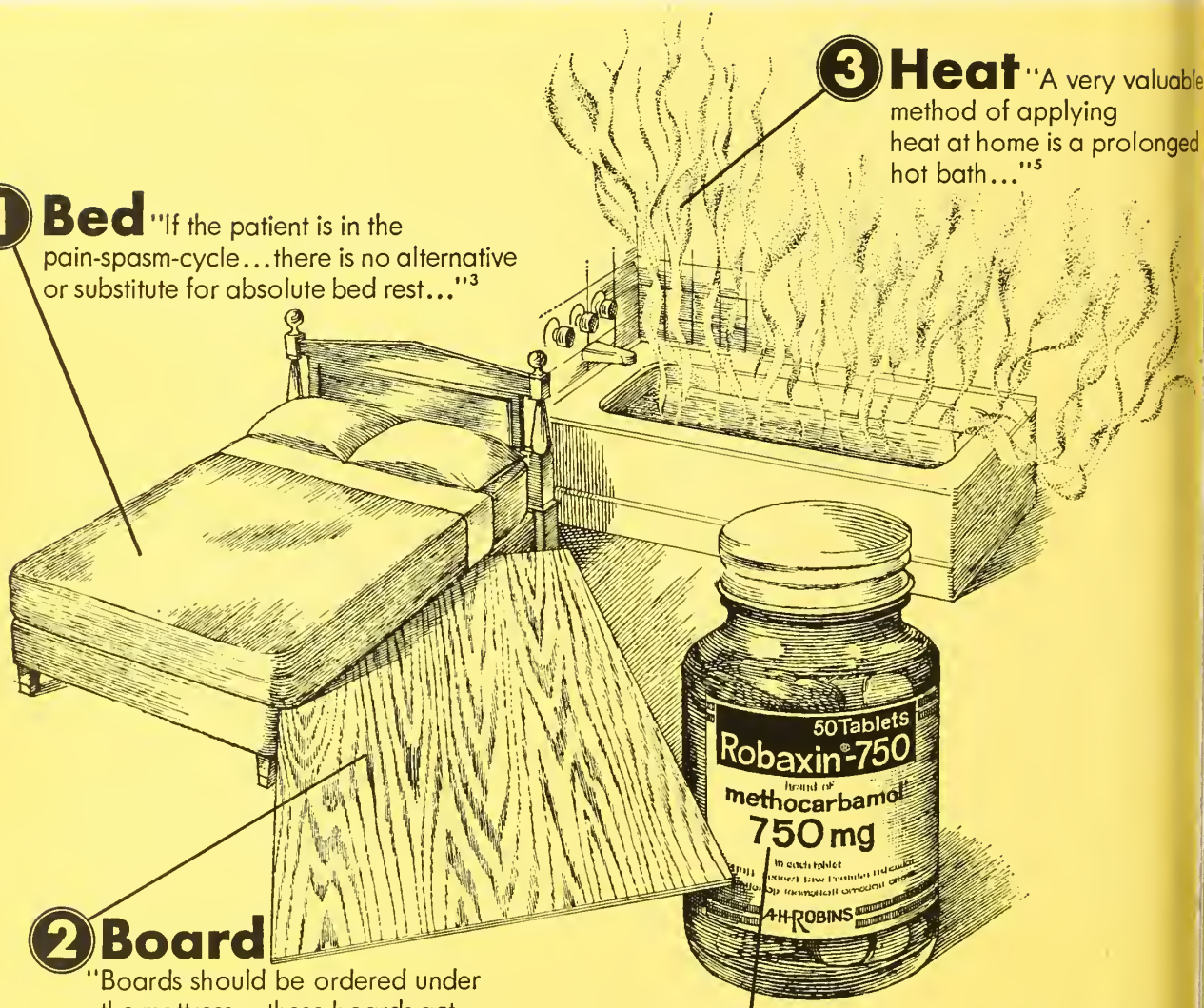
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References: (1). Godfrey, C.M.: Applied Therap. 8:950, 1966. (2). Gattscholk, L.A.: GP 33:91, 1966. (3). Rawe, M.L.: J. Occup. Med. 2:219, 1960. (4). Cazen, L.: South Dakata J. Med. 18:26, 1965. (5). Sata-Hall, R.: Med. Sc. 14:23, 1963. (6). Weiss, M. and Weiss, S.: J. Am. Osteopoth. A. 62:142, 1962. (7). Feuer, S.G., et ol.: New York J. Med. 62:1985, 1962.

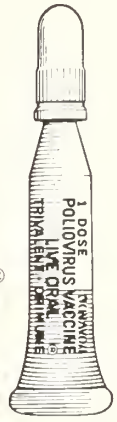
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Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards.

Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e.g., excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver-function tests advisable during protracted therapy.

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THE JOURNAL
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The Maine Medical Association

VOLUME 58 | DECEMBER, 1967 | NUMBER 12

Eastern Maine General Hospital Number

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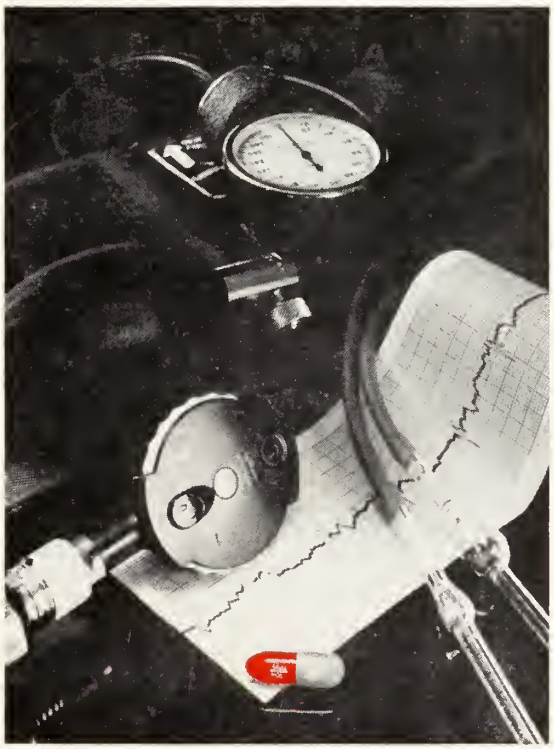
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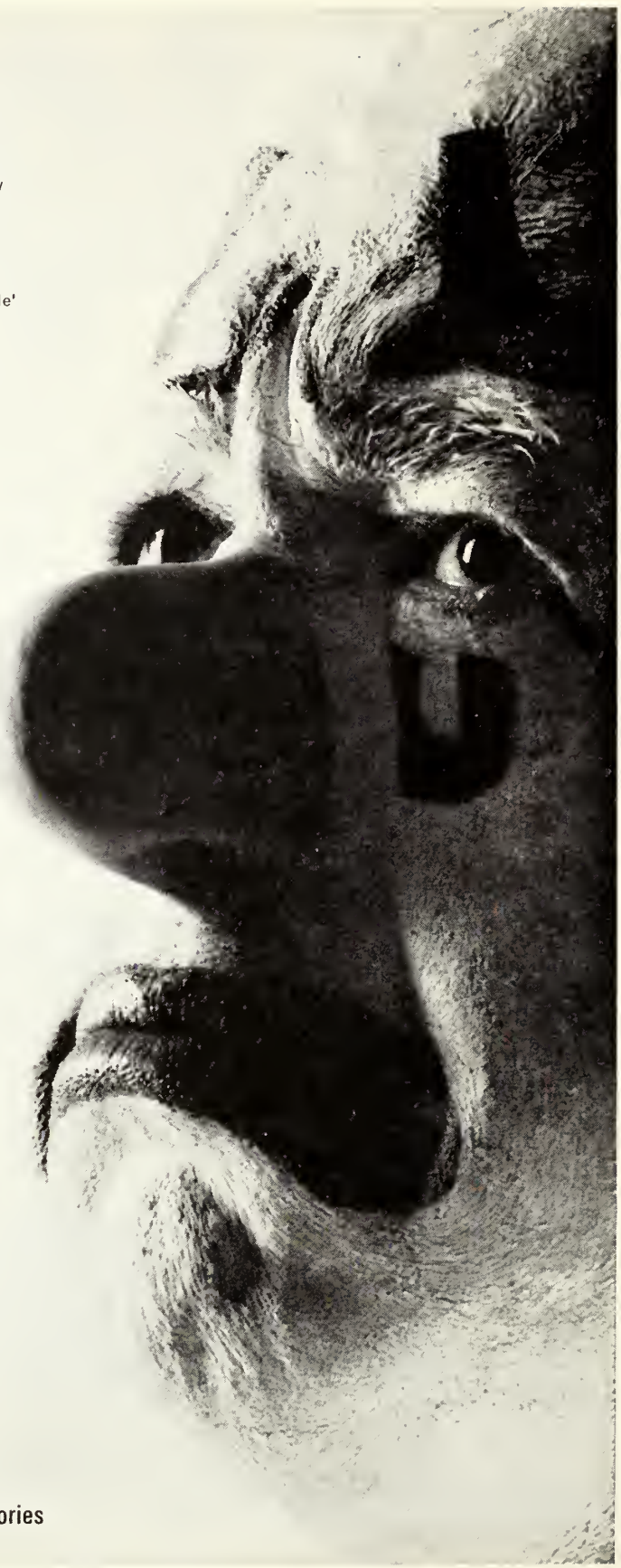


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Progress in Pernicious Anemia Detection*

Mason Trowbridge, Jr., M.D.,** Richard C. Wadsworth, M.D.† and Edward L. Moffitt, B.Sc.‡

Pernicious anemia is a disease of the gastric mucosa affecting primarily individuals over 40 years of age. It is found in all socio-economic groups and appears to have, at least in some cases, a hereditary component. The gastric atrophy which occurs results in loss of ability to secrete hydrochloric acid, pepsinogen, which is the inactive precursor of the proteolytic enzyme pepsin, and intrinsic factor, which is a still poorly defined mucoprotein necessary for the normal absorption of vitamin B-12. Barring extreme food faddists, most individuals, eating a normal diet ingest more than enough vitamin B-12 to meet all their physiological requirements.

The function of gastric intrinsic factor is to bind this vitamin B-12 into an intrinsic factor-B_{12} complex and then deliver the bound vitamin to specific receptor sites in the distal ileum where the vitamin B-12 is passed through the intestinal wall to the blood stream. If the atrophic gastric mucosa of pernicious anemia does not produce intrinsic factor, normal absorption will not occur and tissue depletion of the vitamin will result. This tissue depletion of vitamin B-12 is responsible for the clinical picture of pernicious anemia. Much investigation in various research laboratories is focused on the role of autoimmune mechanisms in the pathogenesis of pernicious anemia. One of the current estimates is that 60 to 70% of the cases reflect an immunological aberration.

The clinical picture of pernicious anemia frequently described is that of a middle-aged individual suffering from chronic and increasing fatigue and weakness shortness of breath, pallor, gastrointestinal disturbances such as loss of appetite and nausea – followed by the discovery of a moderate to marked macrocytic anemia. If the patient responds to intramuscular vitamin B-12 with a clinical remission and a good reticulocyte response the disease is assumed to be pernicious anemia and the neurological deterioration frequently found in long standing, untreated pernicious anemia, does not occur.

Frequently the patient with pernicious anemia seeks medical attention with less characteristic complaints such as not having felt well for some time or merely because he isn't as "chipper" as he used to be. The anemia may be mild *OR* nonexistent. It is becoming increasingly frequent for a neurological derangement, easily interpreted as senile psychosis, to be the presenting picture, with absolutely no sign of anemia. In cases such as this, pernicious anemia may easily be overlooked in the differential diagnosis. While the neurological signs are still mild and of relatively recent onset, specific therapy, that is, injections of vitamin B-12, can restore normal neurological function. But, if there is too much delay, and the neurological damage becomes established, at best, only partial reversal can be expected from therapy. There are undoubtedly individuals today in custodial care institutions[1] suffering from unrecognized pernicious anemia, who, if they had been diagnosed in time, could have been rehabilitated and maintained free of symptoms for a few cents a month.

The danger of treating an undiagnosed macrocytic anemia with folic acid containing vitamin preparations cannot be overemphasized. Folic acid administration has been shown to initiate, accelerate or otherwise aggravate the neurologic degeneration of pernicious anemia, in spite of the fact, that a hematological remission may be temporarily induced.[2]

It was for the early detection of pernicious anemia that this project was designed. The United States Public

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In 1966 she was admitted with a cardiac problem. She had had vitamin B-12 injections on a monthly basis and her hemogram was normal. Diminished vibratory sense and absent ankle jerks were noted.

In 1967 she developed an adenocarcinoma of the rectum which invaded the bladder. A palliative sigmoid colostomy was performed, after which she was transferred to a nursing home. While there, she developed severe abdominal pain following an enema. A transverse colostomy was performed and a localized peritonitis drained. During the postoperative period a double Schilling Test was carried out. The value without intrinsic factor was 0.5% excretion and with intrinsic factor 5.7%. A Segal uropepsin test was 10 minutes, a value rendering the diagnosis of pernicious anemia unlikely.

Discussion: In 1965 when anemia was first noted the patient was considered to have pernicious anemia in spite of the questionable double Schilling test values of 0.0% and 2.0%. Values such as this would ordinarily indicate a malabsorption problem, but since we had had several such sets of results like this with the same "lot" of intrinsic factor it was felt to be very probable that the intrinsic factor had in some way been inactivated (such as by the heat of a radiator in transit). A similarly inconclusive result of 0.5% and 5.7% in 1967, in addition to the peptic activity indicated by the Segal uropepsin test rendered the diagnosis of pernicious anemia less tenable.

However, the serum vitamin B-12 value of nearly zero proved that a severe deficiency of this vitamin did exist. The interesting feature of this case is that she had slight neurological signs consistent with vitamin B-12 deficiency seven years prior to discovery of the anemia. It is possible that two years of steroid therapy for her skin condition slowed the development of the anemia.

It is, in retrospect, obvious that four years prior to the development of the anemia that the patient had a moderate degree of mental derangement. She was told at least twice by physicians and nurses to return for a Schilling Test but did not tell members of the family about this recommendation. The two internists involved had failed to heed the warning of Samson et al[13] concerning the pitfall of delirium in pernicious anemia. Little is suspected by either physicians or nurses if the patient is quiet and tractable. It is only by repeating the history on a later occasion or by doing a "serial sevens" test that a severe mental aberration becomes apparent.

Another patient recently picked up by screening employees of a local paper mill had a serum vitamin B-12 level of 18 uug./ml and a 60 minute no coagulation pepsin. Neurological examination which included proprioceptive testing of all toes and the use of a 256 tuning fork was negative. He did serial sevens well and could not be tripped up by repeating the history. A simple schedule of a bone marrow aspiration, visit to the hematology laboratory, ingestion of the radioactive vitamin B-12 capsule and flushing injection was set up. He suddenly became refractory and abusive at one juncture.

Another recent pernicious anemia patient, seemingly rational, caused a considerable dislocation of medical and paramedical schedules by appearing on the wrong day for her Schilling Test. Careful psychometric studies and electroencephalography is needed in completely normal potential pernicious anemia patients to determine the importance of the latent or pre-pernicious anemia state.

Case No. 3 – In 1958, a 53-year-old white, female registered nurse was admitted to the Eastern Maine General Hospital with the chief complaint of severe diarrhea and exhaustion. The stools were watery, not foamy or greasy, and they contained no blood or mucous. She had paresthesias of the hands and toes and could not pick up a needle. Her legs felt like "sticks." She had been depressed for one to two years. As with the cases described originally by Addison who were uncertain as to the exact date of onset of symptoms, she could merely state that she had been miserable for months and had not felt really well for five to ten years.

No significant physical findings were noted. Hematocrit – 18%. Hemoglobin – 6.0 gms./100 cc. RBC — 1,650,000/mm.^{3} The marrow was megaloblastic and consistent with pernicious anemia. Her clinical response to intramuscular vitamin B-12 was spectacular, but she was discharged before a reticulocyte rise could be documented. Even with a documented rise in reticulocytes the above data would not rule out folic acid deficiency as a possible cause of her anemia and symptomatology. At a later date the diagnosis of pernicious anemia was proven by a double Schilling Test yielding values, without and with intrinsic factor of 1.4% excretion and 24% excretion.

The history at this point is clouded for it was obtained second hand from the patient. Early in 1962, while in Florida, she had asked a local physician to give her an injection of vitamin B-12, which after finding her hematocrit to be "above normal," he refused to do. She returned to Bangor and the serum vitamin B-12 level was found to be 249 uug./ml. No further vitamin B-12 was administered, but serum vitamin B-12 assays were carried out each year. All values were normal, as were hemoglobin and hematocrit values during a three year period of no vitamin B-12 therapy. In July 1965, the serum vitamin B-12 level dropped to 176 uug./ml., at which time monthly injections of 250 micrograms of vitamin B-12 were reinstituted.

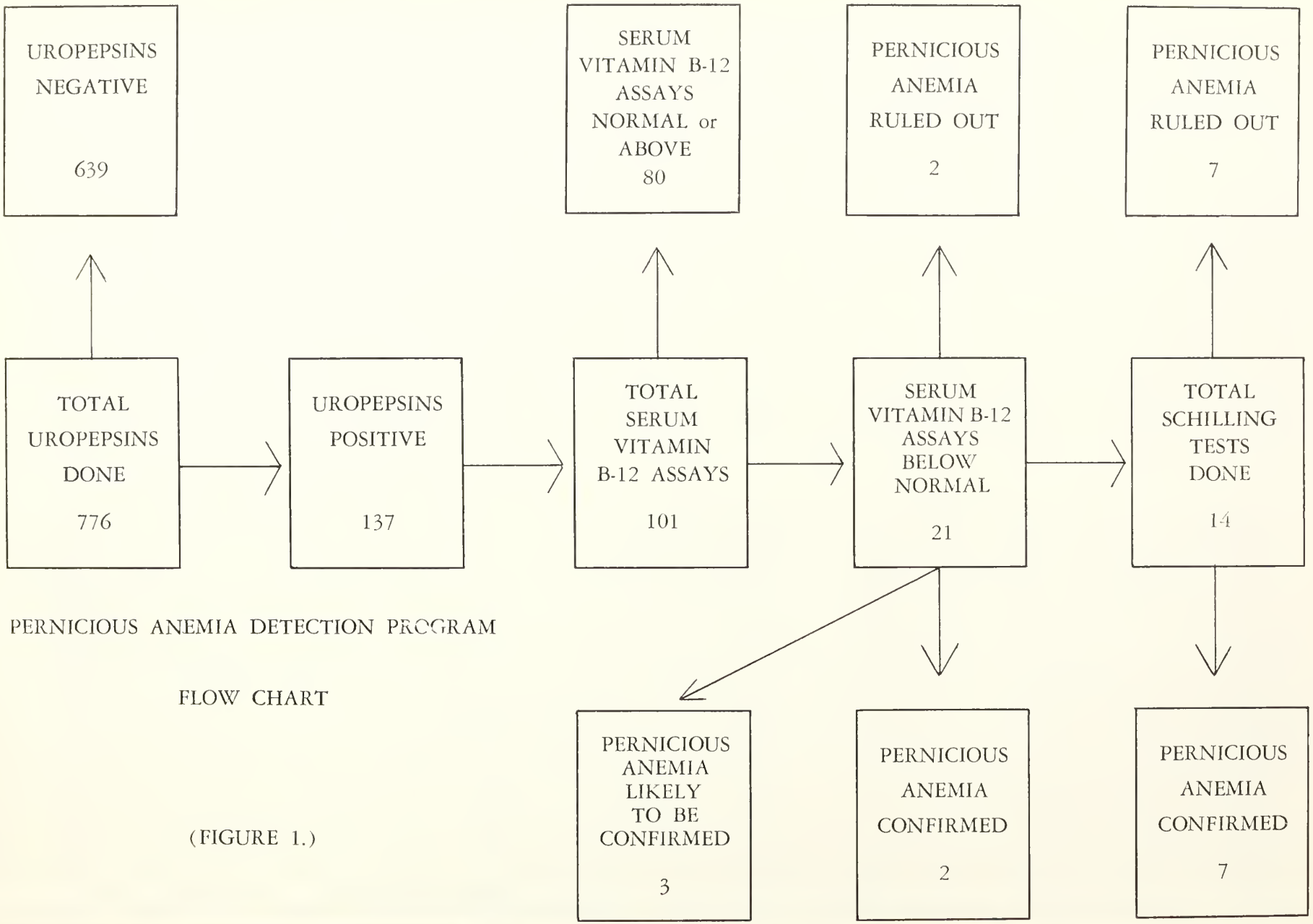
In 1967, she had a protracted and painful siege of herpes zoster. Also in 1967, for the first time, there was some loss of sensation to a 256 tuning fork at the malleoli. The only significant family history was that of an aunt who was studied at a Boston medical center for a myeloproliferative disorder.

Discussion: This proven pernicious anemia patient was purposely untreated for three years with no drop in her hemogram and only after the three years did the serum vitamin B-12 level fall to slightly below normal values. Darby et al[14] withheld vitamin B-12 from pernicious anemia patients, and one patient did not have a relapse for six and one half years. An early case reported by the Harvard group presented with an RBC of 800,000. He was given a single injection of liver extract (10 cc.) and apparently remained in good health for six years.

The patient who has been started on vitamin B-12 or liver extract in whom pernicious anemia has not been documented is very common. All too often the physician elects to discontinue the therapy and observe the hemoglobin or hematocrit. This is a most represensible practice. It would not have been done with our patient had we not had an unusually good rapport with the patient and a highly specialized laboratory. When pernicious anemia needs to be confirmed, the Schilling Test should be promptly used. The presence of free hydrochloric acid in the gastric juice of a patient over fifty would exclude pernicious anemia. However, gastric analysis as frequently carried out with histamine all too often is reported as achlorydria when Kay's augmented histamine test would demonstrate the presence of free acid. Even in university centers few have the time and temerity to carry out this test. Thus, reliance must be placed on the Schilling or other test based on the intestinal absorption of radioactive vitamin B-12.

Results of the Hospital Population Study (Fig. 1)

Of the 776 patients originally selected for study 137 had positive uropepsin tests. Of these, 101 went on to have serum assayed for vitamin B-12. The remaining 36 patients in the positive uropepsin group were discharged before blood for the serum assay was drawn. These patients will be contacted through their physicians for further workup. Of the 101 assays performed, 21 yielded below normal results, which for 14 of them led to the Schilling Test. The Schilling Test confirmed pernicious anemia in 7 and ruled out pernicious anemia in another 7. For two patients with positive uropepsin tests and a low serum vitamin B-12 levels, pernicious anemia was con-



PERNICIOUS ANEMIA DETECTION PROGRAM

FLOW CHART

(FIGURE 1.)

firmed without using the Schilling Test. In three other cases pernicious anemia is likely to be confirmed, but a definitive diagnosis awaits further workup. Thus, for the 137 positive uropepsin tests, a diagnosis of pernicious anemia was confirmed for nine.

Of nine patients who had low serum vitamin B-12 levels yet did not have pernicious anemia, several had a malabsorptive disorder which involved folic acid as well as vitamin B-12, and was not corrected by intrinsic factor.

General Discussion

Hall[15] has pointed out that pernicious anemia is missed all too frequently. We have found the uropepsin test to be an effective means of discovering pernicious anemia which otherwise might have gone undetected. In an earlier correspondence Hall felt it would be difficult to pick up a new case a month of pernicious anemia in a 320 bed general hospital, even in Finland where they have the tapeworm to help. As seen from the results of the six month population sample at least one and a half cases per month were picked up, with the possibility of the case rate going even higher. Unfortunately, the uropepsin test is not perfect. We have had at least 3 false negative results in over 4,000 uropepsins done since the project's inception.

The selection of patients based on the ordering of PBI's was made a part of the program because of the clinical similarity in the way myxedema and pernicious anemia frequently present and because of the relatively frequent finding of antithyroid antibodies in cases of pernicious anemia.

The diagnosis of pernicious anemia is frequently obscured because the patients come in, not because of anemia, but because of some other condition such as an infection or gastrointestinal bleeding, which in itself is a plausible cause of anemia. It is well known that pernicious anemia patients adjust extraordinarily well to very low hemoglobin values. A woodsman, we have record of, had no real trouble handling his chain saw until his hemoglobin dropped to 3.8 gms./100 cc. These patients often do not seek medical care until some other complicating disease has developed. And then, because the clinician's attention is focused on the latter, the underlying pernicious anemia is still missed.

There are no Bangor area physicians, including the osteopathic physicians, who have not been approached and appraised of the importance of making the diagnosis of pernicious anemia as early as possible. The tolerance and degree of cooperation by all physicians with the pernicious anemia project has been outstanding. Nevertheless, all too many patients with uropepsins in the pernicious anemia range have been discharged from the hospital without a free serum vitamin B-12 assay. The task of getting the medical profession as a whole to look for latent or pre-pernicious anemia, as is being done with diabetes, is a formidable one.

Summary

The pathology of pernicious anemia is briefly reviewed, with emphasis on its insidious nature and the possibility of disabling neurological damage if the disease is not detected and diagnosed early.

An aggressive approach to pernicious anemia, using the Segal uropepsin screening test is discussed, with the conclusion that this test is effective in detecting the disease early or when it is masked by superimposed clinical disorders. Kay's Augmented Histamine Test is recommended as the gastric analysis method of choice, its results being the most reliable of the gastric analysis procedures available.

1. Anemia and neurological disease are often late manifestations of pernicious anemia. Much human suffering and expense will be spared by an aggressive effort to make the diagnosis early. Some success has been achieved in pernicious anemia detection by the use of a simple milk coagulation test of random urine specimens. A serum vitamin B-12 assay is carried out on patients showing lessened pepsin secretion.

2. Patients signed out as pernicious anemia are often those whose anemia is due to folic acid deficiency. There is not general realization of the fact that folic acid deficient patients may respond with a sense of well being and reticulocyte rise to the usual doses of vitamin B-12. Folic acid administration may initiate or aggravate the neurological damage of undiagnosed pernicious anemia.

3. A common problem in practice is the patient receiving vitamin B-12 and in whom the diagnosis of pernicious anemia has not been well established. Making the diagnosis by stopping therapy and observing the hemogram is reprehensible.

A relapse may not occur for several years.

4. Neurological disease and psychoses in pernicious anemia may precede the development of anemia by several years.

References

1. Strachan, R. W., Henderson, J. G.: Psychiatric Syndromes due to Avitaminosis B-12 with Normal Blood and Marrow. Quart. J. Med. 34:303, 1965.
2. Conley, C. L., Krevans, J. R.: New Developments in the Diagnosis and Treatment of Pernicious Anemia. Ann. Int. Med. 43:758, 1955.
3. Segal, H. L.: Clinical Measurement of Gastric Secretion: Significance and Limitations. Ann. Int. Med. 53:445, 1960.
4. Ross, G. I. M.: Vitamin B-12 Assay in Body Fluids using Euglena gracilis. J. Clin. Path. 5:250, 1952.
5. Hutner, S. H., Bach, M. K., Ross, G. I. M.: A Sugar-Containing Basal Medium for Vitamin B-12 Assay with Euglena; Application to Body Fluids. J. Protozool. 3:101, 1956.
6. Schilling, R. F.: Intrinsic Factor Studies. II. Effect of Gastric Juice on Urinary Excretion of Radioactivity After Oral Administration of Radioactive Vitamin B-12. J. Lab. & Clin. Med. 42:860, 1953.
7. Kay, A. W.: Effect of Large Doses of Histamine on Gastric Secretion of HCl. An Augmented Histamine Test. Brit. M. J. 2:77, 1953.
8. Herbert, V.: Assay and Nature of Folic Acid Activity in Human Serum. J. Clin. Invest. 40:81, 1961.
9. Holmes, J. M.: Cerebral Manifestations of Vitamin B-12 Deficiency. Brit. M. J. 2:1394, 1956.
10. Herbert, V.: The Megaloblastic Anemias. Modern Medical Monographs, New York, Grune & Stratton, 1959.
11. Castle, W. B.: Personal Communication.

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Carcinoma of the Lip*

Byron V. Whitney, M.D., F.A.C.S.**

Introduction

Many words are written in medical literature with a high percentage of repetition. The author realizes this subject has been well covered in the past. The purpose of this paper is to stress the importance of wide excision of the primary lesion for a maximum cure rate, and to illustrate that a good functional and cosmetic result can be obtained with a Bernard-type recontruction in cases requiring removal of two-thirds of the lower lip. Control of the primary cancer is essential, as revealed in the five-year cure rate of large series of cases.[1] For primary cases treated by surgery, the cure rate was 91.8% and for secondary treated surgical cases, 69.2%. Lip carcinoma is epidermoid or squamous cell carcinoma originating in the mucosa of the lip. This will be the lesion discussed in this paper.

Etiology

Lip cancer has been shown by association to occur in the presence of trauma and poor oral hygiene. Usually the disease is found in old men with carious teeth and gingivitis, who either smoke a pipe, or chew tobacco, or do both. Frequently this malignancy is seen in men exposed to the elements, particularly the actinic rays. This is exemplified by Leband's report of premalignant lesions of servicemen in Korea, and the occurrence of lip carcinoma in the twenty-year age group.[2] Carcinoma of the lip is rarely seen in Negroes and is more common in Caucasians with fair skin, which substantiates the role of pigment protection against the sun's rays. A large number of reported cases reveals sex distribution of 97% men and only 3% women with carcinoma of the lip. The rare occurrence in women possibly is due to protection provided by lipstick. Other factors of importance in explaining this difference in sex occurrence have been mentioned: pipe smoking, tobacco chewing, and oral hygiene.

Incidence and Symptoms

Although the incidence of lip cancer is low, it is the most common intraoral malignancy. Lip cancer is very innocent appearing in the beginning. It may take the form of a small nodule, a crusting ulcer which partially heals, or a fissure. The lesion does not produce pain. As it gradually enlarges, it may ulcerate and bleed. Frequently it does become secondarily infected, whereupon it will be tender. If the cancer is not treated, it metastasizes to the regional lymph nodes.

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Diagnosis

Due to its external location, all lip cancer should be discovered early by the patient. The average man looks at his face reflection in the mirror at least three times a day. Frequently carcinoma of the lip is treated with various local preparations a number of weeks before definitive treatment is accomplished. Diagnosis is easily made by biopsy and histological examination. Thorough examination should be made of the head and neck.[3] The first nodes to be involved are the submental and submaxillary. These nodes communicate and drain into the jugular chain, which subsequently becomes invaded.

Treatment

Cancer of the lip is curable by irradiation and by surgery. The method of choice is determined by the following factors:

1. Lesion size.
2. Patient's age.
3. Primary or secondary treatment.
4. Whether or not metastasis to lymph nodes is present.
5. Local recurrence and node metastasis.

1. Lesion Size

Lesions 1 cm. or smaller can be treated by either surgery or irradiation and should have a cure rate of 95%. Larger lesions are best treated surgically as the five-year cure rate will be 20% greater than with irradiation. Also, the tissue destruction by irradiation is extensive in the treatment of large lesions, requiring secondary surgical precedures and hence poorer functional and cosmetic result.

2. Age

In view of our knowledge of late radiation changes, irradiation should not be the treatment of choice in individuals under fifty years.

3. Primary or Secondary Treatment

Surgery is definitely the treatment for recurrences of lip cancer in view of a five-year cure rate of 60% for the surgically treated against 10% for the irradiation cases.

4. Lymph Node Metastasis

Radical neck dissection is the treatment for node metastasis. The presence of node metastasis lowers the five-year cure rate to 32%.

5. Local Recurrence and Node Metastasis

There is a higher incidence of recurrence in the irradiation treated cases. The majority of the recurrences will appear within three years after treatment (approximately 60%). The remaining 40% will appear in the interim of the next seven years. Node metastasis like-

wise appears within ten years of primary treatment with the largest number appearing in the first two years.

Plan of Therapy

1. Improve hygiene of mouth.
2. Surgical excision of lesion with a 1 cm. border of normal tissue around all margins of the cancer.
3. Radical neck dissection if submental, submaxillary, or jugular nodes are palpable. If submental, midline nodes are palpable, a staged bilateral radical neck dissection will be necessary. An occasional case will have palpable nodes that are inflammatory, and will disappear after removal of the primary lesion.
4. Diligent follow-up of the patient, checking for local recurrence and node metastasis:
 Four-week intervals the first six months.
 Six-week intervals the second six months.
 Two-month intervals the second year.
 Three-month intervals the third year.
 Four-month intervals the fourth and fifth years.
 Six-month intervals the fifth to the tenth years.

The surgical treatment of lip carcinoma must strive to cure the primary lesion. Mortality from lip cancer occurs as a result of the following three conditions:

1. The lesion is large, 3 cm. or more, when first seen and is Grade III or IV squamous cell carcinoma. Recurrences locally and metastasis to regional nodes occur more frequently with the large lesion.
2. Inadequate removal of the primary lesion. The surgical margins of normal tissue are a few milimeters. This is more common with the large primary lesion.
3. Inadequate follow-up. When a patient is not examined at frequent intervals, local recurrence and node metastasis are not detected early, and there is delay in surgical treatment.

The following case will be used to illustrate removal of five-sevenths of the lower lip and reconstruction by the Bernard procedure. The Estlander cheiloplasty produces a poor commissure and requires a secondary procedure (Gillies). The Abbe-Estlander bridged cheiloplasty preserves the commissure but requires a procedure to divide the bridge. It is impossible to produce an adequate mouth opening by this method in removal of lesions over 2 cm.

Case Presentation

A 73-year-old man was first seen in Tumor Clinic with an ulcerating lesion of the central half of the lower lip, measuring 3 cm. horizontal direction by 1.5 cm. in vertical dimension (see Figs. 1 and 2). Detailed history was not obtainable, as he had been a mental patient for several years. There was a history of pipe smoking. The duration of the lesion was not known. His oral cavity was edentulous and clean. The cardiopulmonary and renal systems were adequate by appropriate tests to undergo surgery and general anesthesia. Biopsies with local anesthesia confirmed the diagnosis of squamous cell carcinoma, Grade II. There were no submental, submaxillary, or jugular nodes palpable.

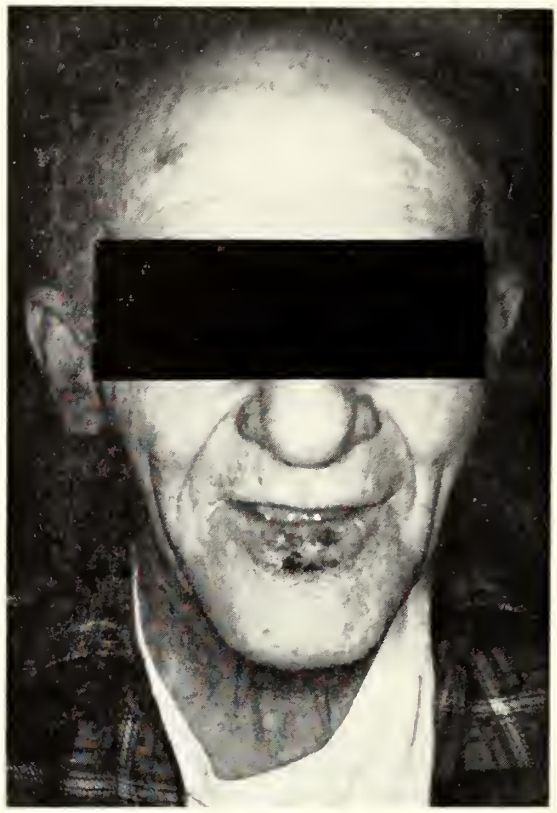


Fig. 1



Fig. 2

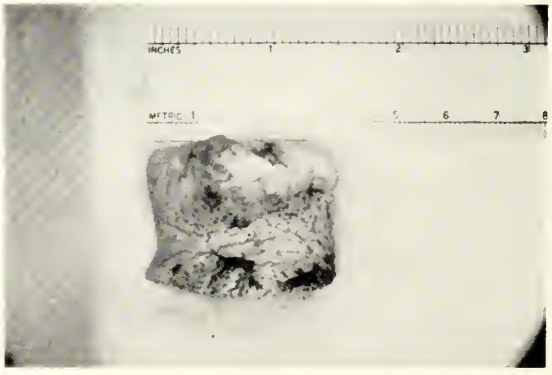


Fig. 3



Fig. 4

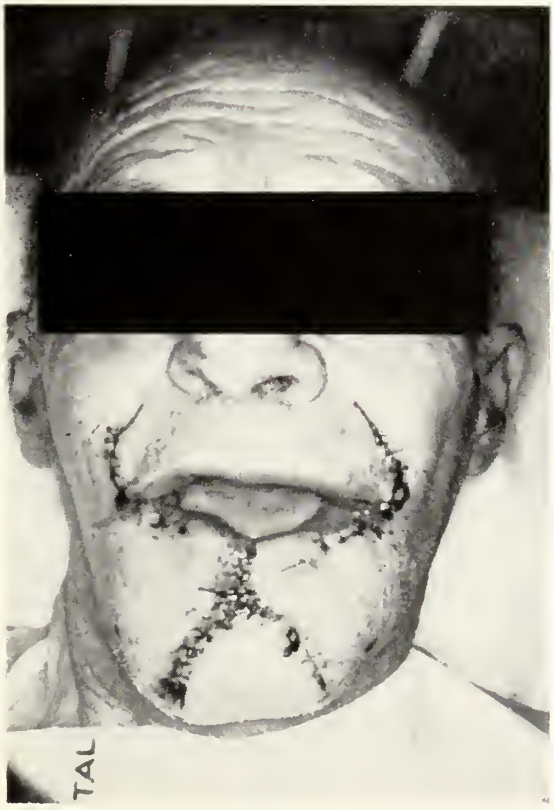


Fig. 5



Fig. 6

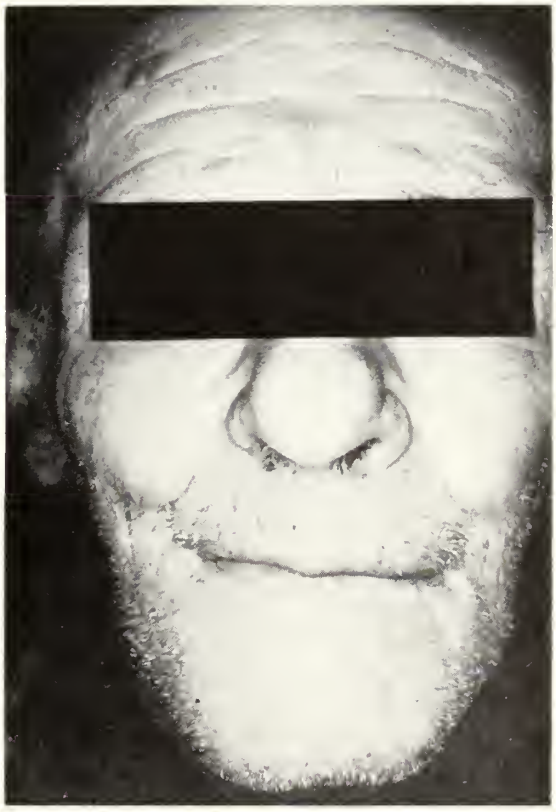


Fig. 7

The lesion was removed with a 1 cm. border of normal tissue on all sides, leaving only 1 cm. on either side of remaining lip (See Fig. 3). Two cm. of new lower lip were constructed from the cheek on either side by the Bernard procedure as illustrated (see Fig. 4). Diagram A shows full thickness excision of rectangle allowing 1 cm. of normal tissue on each margin of the lesion. A narrow margin of gingivobuccal mucous membrane is preserved on the alveolar ridge for suturing to the advanced cheek flaps. Two triangles are outlined in each nasolabial area. The base is slanted upward and its measurement is half of the excised lip specimen. The skin and muscle of these two triangles are excised preserving the mucous membrane, which is brought down as a flap to form the vermilion border of the new lip shown in diagram B. The lateral chin flaps are freed and brought into the midline. Two triangles at the base are excised as shown in A to C. The immediate postoperative appearance is portrayed in Figs. 5 and 6.



Fig. 8

Three months after surgery, the patient has a good cosmetic and functional result (see Figs. 7 and 8). It should be noted that he has a very adequate mouth opening for eating and has sufficient room for insertion and removal of dentures.

Conclusions

1. Squamous cell carcinoma of the lip, 3 cm. in length, can be removed with adequate surgical borders. Reconstruction by the Bernard cheiloplasty produces a good functional and cosmetic result.
2. One of the important factors in striving for a cure is to provide adequate surgical margins, that is, 1 cm. borders of normal tissue.

References

1. Cross, J. E., E. Guralnick and E. M. Daland: Carcinoma of the Lip. A review of 563 case records of Carcinoma of the Lip at the Pondville Hospital. Surgery, Gynecology and Obstetrics 87: pp. 153-162, 1948.
2. Leband, P., and Bumsted, W.: Premalignant lesions of the lips of soldiers returning from Korea, Oral Surgery, Oral Medicine and Oral Pathology, 8: 1, pp. 64-75, 1955.
3. Whitney, B. V.: Is the Oral Cavity Neglected? The Journal of the Maine Medical Association, December 1961.
4. Symposium on Cancer of the Head and Neck.
 Annual Scientific Session, American Cancer Society, October 1957.
 Postgraduate Course on Cancer of the Head and Neck.
 50th Annual Clinical Congress, October 1964.

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Gram Negative Non Fermenters and their Reactions on Bacto-Sellers Differential Agar*

Mrs. Donald (Jane Snow) Griffee, Jr.

Accurate identification of cultures in the bacteriological laboratory is the aim of all bacteriologists and the object of extensive study for many researchers. A group of gram negative, non-fermenting bacilli are among those often difficult to identify cultures. Isolated not infrequently in hospital laboratories, *Pseudomonas, Herella, Mima* and *Alcaligenes* are gram negative, coccoid to rod shaped, non-fermenting, and in many other ways quite biochemically inert organisms.

In the January 1964 issue of *The Journal of Bacteriology,* Walter Sellers published an article, "A Medium For The Differentiating The Gram Negative Non Fermenting Bacilli Of Medical Interest."[1] In this article Sellers describes a media which he developed for differentiating the non fermenters. It is now distributed by DIFCO as Bacto-Sellers Differential Agar.[2] It is the validity of its reaction and the practicality of use of this media for the hospital laboratory that is the object of this study.

Pseudomonas as a human pathogen is commonly isolated from cystitis, intestional infections, wounds and burns, generalized infections, and with increasing frequency from the respiratory tract.[3] The most frequent species is *Pseudomonas aeroginosa,* which is usually readily identified by its water soluble pigments, fluorescin and pyocyanin.[4] Many *Pseudomonas* strains are, however, non pigmented and other strains may lose their ability to produce pigment with age; they therefore, may be confused with other non fermenting, gram negative bacteria.[5] Sorenson describes nine characteristics which he considers as essential for positive identification of *Pseudomonas.*[6]

1. Typical colony formation – large, smooth, sometimes spreading, translucent colonies.
2. Marked odor of trimethylamine.
3. Gram negative bacilli which produce a pellicle in liquid media.
4. Produce acid from glucose, but not from lactose, sucrose, etc.
5. Liquify gelatin.
6. Fail to hydrolize urea.
7. Ability to grow at 42° C.
8. Ability to reduce potassium gluconate in shake cultures.
9. Production of a slimy sediment from static cultures in gluconate medium.

Three biochemical tests may be used to identify the *Pseudomonas*[5] organisms. The Gluconate oxidation tests which depends on the ability of keto-gluconate, an oxidative product of gluconate by *Pseudomonas,* to reduce Benedict's Reagent; the oxidase test in which there is the production of a purple color with a solution of tetramethylparaphenylenediamine dihydrochloride; and the cytochrome oxidase test in which 1% aqueous solution of p-aminodimethylaniline oxalate in a 1% ethanol solution of alpha naphthol produces a blue color in the presence of cytochrome oxidase.[7]

Organisms of the Genus *Herella* are ordinarily commensals of the gastrointestinal, genital and respiratory tracts of human beings.[8] As human pathogens, *Herella* organisms have been isolated from urine, blood, wounds, respiratory tract infections, abcesses, burns and cerebral spinal fluid.[9] On culture *Herella vaginicola* produces no pigment; appears convex, smooth, gray-white and opaque; is usually non hemolytic; and is associated with a characteristic unpleasant odor.[10]

Members of the Genus *Herella* along with most members of the Genus *Pseudomonas* produce acid with a few of the carbohydrates by an oxidative rather than the usual fermentative process common to the group of bacteria known as the Enterobacteriaceae.[11,12] The fermentation of carbohydrates is accomplished when the glucose molecule is phosphorylated and then split into two triose molecules which undergo further changes, a process independent of oxygen.[13] Oxidation, however, is accomplished by oxidizing the aldehyde group to a carboxyl group forming gluconic acid, a strictly aerobic process.[14] A method of distinguishing oxidative from fermentative acid production has been described.[15] Two tubes of OF medium are inoculated; one is sealed with sterile petroleum. Oxidative organisms produce acid only in the open tube, while fermentative organisms produce acid in both tubes. Acid production on a 10% lactose slant is considered to be conclusive for *Herella* organisms.[16]

Hydrogen sulfide production may be used as a differential characteristic of the Genus *Herella.*[17] *Herellea* often blacken slightly in triple sugar iron agar. The production of hydrogen sulfide may be confirmed by the Methylene Blue Method which depends on the reaction of p-aminodimethylaniline and sulfide to form methylene blue in the presence of ferric chloride in an acid solution.[18]

Mima polymorpha has been recovered from human vaginal, uretheral, and conjunctival secretions, war

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nies are smooth and semi-translucent.[26] Carbohydrates are not utilized by *Alcaligenes faecalis*.[27] Like *Pseudomonas aeroginosa, Alcaligenes faecalis* reduces nitrates to form nitrites and/or nitrogen gas.[28]

As have been mentioned, there have been several biochemical tests, and also a few differential media developed to aid in the identification of the non fermenting bacteria – *Pseudomonas aeroginosa, Herella vaginicola, Mima polymorpha,* and *Alcaligenes faecalis*. Many of these tests, however, involve quite complicated and often time consuming procedures. The majority of hospital laboratories are not equipped to do many of these forementioned tests with ease. A simple to use, yet accurate method of differentiating the non fermenting gram negative bacilli would be most beneficial to the hospital laboratory.

Bacto-Sellers Differential Agar is an easily prepared, easily inoculated medium. It requires no special conditions for growth, growth on it occurring with incubation at 37° C. and under aerobic conditions. Sellers medium is used as a slant which one stabs and streaks to inoculate.

Bacto-Sellers Differential Agar will show different and distinct reactions with each of the non fermenters, *Pseudomonas aeroginosa, Herella vaginicola, Mima polymorpha,* and *Alcaligenes faecalis*. The reactions of the medium are based on the utilization of nitrates and nitrites to produce nitrogen gas, the production of acid from dextrose, and the production of fluorescein.[30]

BACTO – SELLERS DIFFERENTIAL AGAR

	Formula of Sellers[31]	
Bacto – Yeast Extract	1.0	g
Bacto – Peptone	20.0	g
l – Arginine	1.0	g
d – Mannitol (Osmitrol®)	2.0	g
Brom Thymol Blue	0.04	g
Phenol Red	0.008	g
Sodium Chloride	2.0	g
Sodium Nitrate	1.0	g
Sodium Nitrate	0.35	g
Magnesium Sulfate	1.5	g
Dipotassium Phosphate	1.0	g
Bacto – Agar	15.0	g

Incorporated into Sellers medium are sodium chloride, sodium nitrate, sodium nitrite, d-mannitol, l-arginine, yeast extract, magnesium sulfate, dipotassium phosphate, peptone, brom thymol blue, phenol red, and agar.[32] Sodium nitrate permits the production of nitrogen gas and sodium nitrite is used also because some *Pseudomonas* strains can produce nitrogen gas from nitrites, but not from nitrates; dipotassium phosphate also stimulates nitrogen gas production.[33] D-mannitol and magnesium sulfate stimulate fluorescein production.[34] L-arginine and peptone inhibit the production of acid from glucose by *Pseudomonas*.[35] Brom thymol blue and phenol red are reaction indicators.[36] Three drops of a 50% dextrose solution is added to the agar slant by letting it slide down the side of the tube opposite the slant immediately before inoculation of the slant. This permits the production of acid by *Herella*.[37]

After 24 hours incubation at 37° C. the non fermenters will show their characteristic reactions on Bacto-Seller's Differential Agar. *Pseudomonas aeruginosa* is able to grow anaerobically in the butt of the tube as well as aerobically on the slant due to the presence of nitrate. In its utilization of nitrate considerable amounts of nitrogen gas are produced. *Pseudomonas* fails to produce acid from the dextrose due to the arginine and high peptone concentrations, although *Pseudomonas* usually produces acid from dextrose under other conditions. Pseudomonas aeruginosa gives a fluorescent growth on the slant due to its pigment production. An alkaline reaction is produced in the butt of the tube.[38]

Herella vaginicola is an obligate aerobe and is unable to grow anaerobically even in the presence of nitrogen; therefore, there is no change in the butt of the tube. An alkaline slant is produced. The distinctive characteristic of *Herella* is the production of a yellow band at the junction of the butt and the slant due to acid production from the 50% dextrose which was added to the medium just before inoculation of the culture.[39]

Also an obligate aerobe, even in the presence of nitrate, *Mima polymorpha* will produce no change in the butt of Sellers medium. *Mima* does not produce a fluorescent slant nor does it produce acid from dextrose. The only visible reaction of *Mima polymorpha* on Bacto-Sellers Differential Agar is the production of an alkaline slant.[40]

Alcaligenes faecalis, like *Pseudomonas aeruginosa,* is able to utilize nitrates and nitrites for anaerobic growth. It, therefore, produces nitrogen gas in the butt of the tube. *Alcaligenes faecalis* does not produce acid from dextrose, nor does it produce a fluorescent slant.[41]

Bacto-Sellers Differential Agar was used to aid in the identification of 48 different cultures of gram negative, non-fermenting bacilli which were grown from specimens sent to our laboratory for culture. All of these cultures were non reactive on Triple Sugar Iron Agar. Many of these cultures could not be positively identified by the usual biochemical tests – urea slants, citrate slants, indole production, MRVP, and fermentation of various sugars. Gram stained smears of the cultures which were finally identified as *Mima polymorpha, Herella vaginicola,* and *Alcaligenes faecalis* showed gram negative, predominantly cocco bacilli forms appearing in pairs. Most *Pseudomonas aeruginosa* cultures appeared as short coccoid to medium length gram negative bacilli on Gram stain. A few *Pseudomonas* strains were found that did not produce gas from its utilization of nitrates and/or nitrites. All of the cultures appeared to react according to the scheme proposed by Sellers[42] with the exception of the *Pseudomonas* strains which produced no apparent gas formation. *Herella vaginicola* cultures were confirmed by acid production on 10% lactose slants (no acid was produced in liquid 10% lactose fermentation tubes).

Continued on page 267



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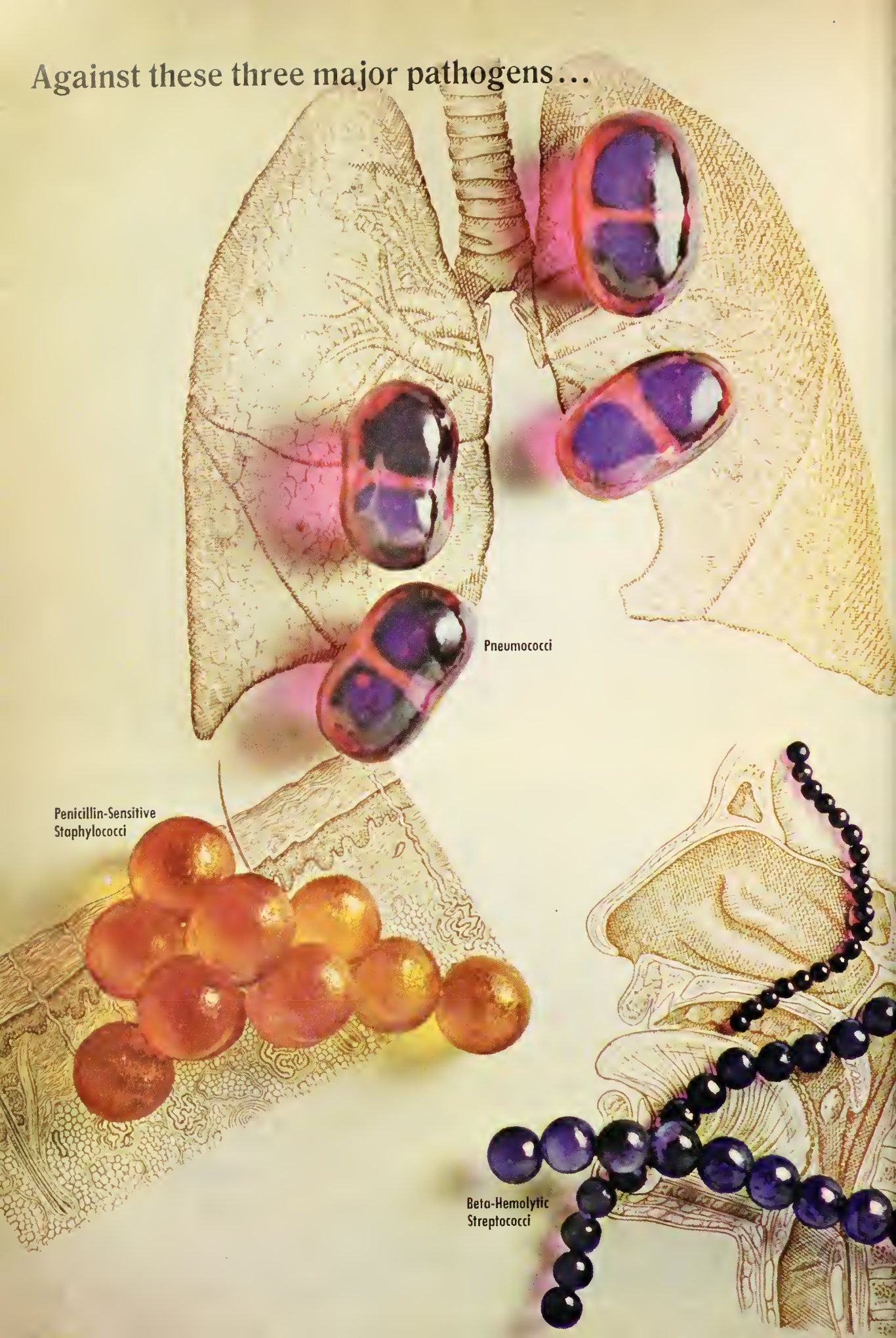
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Contraindication: Penicillin hypersensitivity.

Warnings: In rare instances, penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin or with bronchial asthma or other allergies. Resuscitative drugs should be readily available. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: Use cautiously, if at all, in a patient with o strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with high parenteral dosage schedules, frequent evaluation of the renal and hematopoietic systems is recommended.

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Administration and Dosage: Usual dosage ronge, 125 mg. (200,000 units) three times a day to 500 mg. (800,000 units) every four hours. For infants, 50 mg. per Kg. per day divided into three doses.

See package literature for detailed dosage instructions for prophylaxis of streptococcus infections, surgery, gonorrhea, and severe infections.

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Summary

There is a need for an accurate method to use in the identification of the gram negative non fermenters which often give identification difficulties to the hospital laboratory. Bacto-Sellers Differential Agar is an accurate and relatively simple to use method for the identification of the non fermenting, gram negative, cocco bacilli *Pseudomonas aeruginosa, Herella vaginicola, Mima polymorpha,* and *Alcaligenes faecalis.*

A study of 48 cultures of these non fermenters showed evidence of this accuracy of Bacto-Sellers Differential Agar. All of the cultures grew well with incubation at 37° C. for 24 hours and could be differentiated by their reactions with the medium. Easy to prepare and inoculate, Bacto-Sellers Differential Agar would be of considerable benefit to the average hospital laboratory for use in the identification of gram negative, non fermentive organisms.

References

1. Sellers, Walter, "A Medium For Differentiating The Gram Negative, Non Fermenting Bacilli Of Medical Interest," The Journal of Bacteriology, 87: 1964, pg. 46-48.
2. DIFCO Technical Information, "Bacto-Sellers Differential Agar," May, 1964, code 0895.
3. King, E. O., "Mimeae Infections," Diagnostic Procedures and Reagents. 4th Edition, American Public Health Association, 1963, pg. 620-628.
4. Gaby, W. L., and Free, E., "Occurrence and Identification of Non pigmented Strains of Pseudomonas Aeruginosa in the Clinical Laboratory," The Journal of Bacteriology, 66: 1953, pg. 745.
5. Ibid.
6. Sorenson, R. H., "A Simple Method of Recognition of Atypical Non Pigmented Pseudomonas Strains Using A Reduction Indicator," The American Journal of Medical Technology, 29: 1963, pg. 93-96.
7. Gaby, W. L., and Free, E., "Differential Diagnosis of Pseudomonas-Like Microorganisms in the Clinical Laboratory," The Journal of Bacteriology, 76: 1958, pg. 442-444.
8. Daly, A. K., Postic, B., and Kass, E. H., "Infections Due to Organisms of the Genus Herella," A. M. A. Archives of Internal Medicine, 110: 1962, pg. 580-591.
9. King, E. O., "Mimeae Infections," Diagnostic Procedures and Reagents, 4th Edition, American Public Health Association, 1963, pg. 620-628.
10. Ibid.
11. King, E. O., "The Identification of Unusual Pathogenic Gram Negative Bacteria," Round Table Current Trends in Diagnostic Microbiology, Laboratory Branch, Communicable Disease Center, Public Health Service, Department of Health, Education, and Welfare, Atlanta, Georgia. pg. 1.
12. Mandel, ad., et al., "Selective Medium for Isolation of Mima and Herella Organisms," The Journal of Bacteriology, 88: 1964, pg. 1524-1525.
13. Hugh, R., and Leifson, E., "The Taxonomic Significance of Fermentative Versus Oxidative Metabolism of Carbohydrates by Various Gram Negative Bacteria," The Journal of Bacteriology, 66: 1953, pg. 24-26.
14. Ibid.
15. King, E. O., "Mimeae Infections," Diagnostic Procedures and Reagents, 4th Edition, American Public Health Association, 1963, pg. 620-628.
16. King, E. O., "The Identification of Unusual Pathogenic Gram negative Bacteria," Round Table Current Trends in Diagnostic Microbiology, Laboratory Branch, Communicable Disease Center, Public Health Service, Department of Health, Education and Welfare, Atlanta, Georgia.
17. Controni, G., and Sawyer, M. A., "Hydrogen Sulfide Production by Herella," The American Journal of Medical Technology, 31: 1965, pg. 301-304.
18. Ibid.
19. Thompson, R. B., and Couey, B. J., "A Relatively Unknown Pathogen – Mimeae," The American Journal of Medical Technology, 28: 1962, pg. 64-66.
20. King, E. O., "Mimeae Infections," Diagnostic Procedures and Reagents, American Public Health Association, 1963, pg. 620-628.
21. Thompson, R. B., and Couey, B. J., "A Relatively Unknown Pathogen – Mimeae," The American Journal of Medical Technology, 28: 1962, pg. 64-66.
22. DeBord, G. G., "Species of the Tribes Mimeae, Neisseria, and Streptococcae Which Confuse the Diagnosis of Gonorrhea by Smears," The Journal of Laboratory and Clinical Medicine, 28: 1943, pg. 710-714.
23. Mandel, ad, et al., "Selective Medium for Isolation of Mima and Herella Organisms," The Journal of Bacteriology, 88: 1964, pg. 1524-1525.
24. Ibid.
25. Ibid.
26. Leifson, E., and Hugh, R., "Alcaligenes dentrificans n. sp.," The Journal of General Microbiology, 11: 1952, pg. 512-513.
27. Ibid.
28. Denault, Leo J., Cleveridon, R. C., and Kulp, W. L., "Nitrogen compounds Utilized by Alcaligenes faecalis," The Journal of Bacteriology, 66: 1953, pg. 465-467.
29. King, E. O., "The Identification of Unusual Pathogenic Gram Negative Bacteria," Round Table Current Trends in Diagnostic Microbiology, Laboratory Branch, Communicable Disease Center, Public Health Service, Department of Health, Education and Welfare, Atlanta, Georgia.
30. DIFCO Technical Information, "Bacto-Sellers Differential Agar," May, 1964, code 0895.
31. DIFCO Technical Information, "Bacto-Sellers Differential Agar," May, 1964, code 0895.
32. DIFCO Technical Information, "Bacto-Sellers Differential Agar," May, 1964, code 0895.
33. Sellers, Walter, "A Medium for Differentiating the Gram negative, Non Fermenting Bacilli of Medical Interest," The Journal of Bacteriology, 87: 1964, pg. 46-48.
34. Ibid.
35. Ibid.
36. Ibid.
37. DIFCO Technical Information, "Bacto-Sellers Differential Agar," May, 1964, code 0895.
38. Sellers, Walter, "A Medium for Differentiating the Gram Negative, Non Fermenting Bacilli of Medical Interest," The Journal of Bacteriology, 87: 1964, pg. 46-48.
39. Ibid.
40. Sellers, Walter, "A Medium for Differentiating the Gram negative, Non Fermenting Bacilli of Medical Interest," The Journal of Bacteriology, 87: 1964, pg. 46-48.
41. Ibid.
42. DIFCO Technical Information, "Bacto-Sellers Differential Agar," May, 1964, code 0895.
43. Sellers, Walter, "A Medium for Differentiating the Gram Negative, Non Fermenting Bacilli of Medical Interest," The Journal of Bacteriology, 87: 1964, pg. 46-48.

PROGRESS IN PERNICIOUS ANEMIA DETECTION — *Continued from page 258*

12. Herbert, V.: The Diagnosis and Treatment of Folic Acid Deficiency. Med. Cl. N. Am. 46:1365, 1962.
13. Samson, D. C., Swisher, S. N., Christian, R. M., Engel, G. L., Cerebral Metabolic Disturbance and Delirium in Pernicious Anemia. Arch. Int. Med. 90:4, 1952.
14. Darby, W. J., Jones, E., Clark, S. L., McGanity, W. J., Dutra de Oliveira, J., Perez, C., Kevany, J., LeBrocquy, J.: Development of Vitamin B-12 Deficiency by Untreated Patients with Pernicious Anemia. Am. J. Clin. Nutrition 6:513, 1958.
15. Hall, C. A.: The Nondiagnosis of Pernicious Anemia. Ann. Int. Med. 63:951, 1965.

DEAN H. FISHER, M.D.
COMMISSIONER

State Of Maine

Department of Health and Welfare

1968 Standard Revision of Certificates of Live Birth, Death, and Fetal Death for the State of Maine

EDSON K. LABRACK*

New standard certificates of Live Birth, Death and Fetal Death have been adopted and will be used in recording these events in the State of Maine beginning January 1, 1968.

Background of the 1968 Revision

The new standard certificates were developed by the National Center for Health Statistics with the advice and assistance of registration and statistical officials from all of the state health departments. Suggestions and views of hundreds of other interested individuals, official agencies, and professional associations – local, state, and national – were also considered.

The objective in this endeavor is to produce national vital statistics that will serve adequately public health and other social interests. With the present emphasis on comprehensive health planning based on factual data, the need for state-to-state and area-to-area comparisons of uniform vital statistics information becomes more urgent. Such comparisons have always been considered desirable but now they are essential.

The Need for New Items

During the past twelve years it has become apparent to the users of vital records that the 1956 revision does not supply some needed information. In that period, for example, problems of population growth came to be recognized as a crucial factor in social and economic development. As births are the major determinant of population growth, the birth certificate became more crucial to the study of these problems. Yet, the 1956 revision of the standard birth certificate did not ask for adequate information about the socioeconomic status of the parents or any information on the spacing of their children. Accordingly, educational attainment, one of the most useful indexes of socioeconomic status, and the dates of last live birth and fetal death were added to the birth and fetal death certificates in the 1968 revision.

Nine new items relating to maternal and child health have been added to the confidential sections of the certificates of live birth and fetal death. These are date of last live birth and fetal death, month of pregnancy in which prenatal care began, total number of prenatal visits, complications of labor, complications related and not related to pregnancy, birth injuries to the child or fetus, and congenital malformations. This information is important for State and local programs to improve maternal and child health. It is also needed on a national scale to provide adequate statistics to study certain infrequent medical conditions related to pregnancy and childbirth. National statistics, of which the birth and fetal death records are the only source, are needed to detect changes in the incidence of and to understand the causes of such health problems. Research using such information may lead to improvements in maternal and child health and reduction of the infant and fetal mortality rates.

The Need for Making Additional Items Confidential

In order to protect the privacy of the individuals to whom the certificates apply, most of the new items have been placed in a section of the certificates labeled: "Confidential Information for Medical and Health Use Only" on the birth and fetal death certificates. This is one of the most important changes in the 1968 revisions of the standard certificates.

This section is new to the standard certificates of fetal death. For the standard certificate of live birth, the 1968 revision is an expansion of the section "For Medical and Health Use Only" of the 1956 revision. Inclusion of additional items in this section recognizes the increased importance of confidential treatment of information on vital records. For several years all but two States have had a section on their live birth certificates which is comprised of items of information of restricted use. A few States have had a similar section on their fetal death certificates.

Death Certificates

Departure from the previous standard death certificate in the revision is not as pronounced as in the revision of the other two certificates already discussed. Small differences in print style and in arrangement of items on the certificate have resulted in an improved standard certificate.

*Director, Research and Vital Records.

Twenty Years of Maternal and Child Health and Crippled Children Services in Maine, 1945-1965

Ella Langer, M.D.*

This is a condensation of a paper covering the two decades. It is hoped that the report in full will be published in the not too far future. It will show the whys for starting new programs and especially as background of the progress the cultural, socio-economic changes. Also briefly the history of Public Health in Maine. Above all, the spectacular advances in Medicine during the 20 years will be discussed and their influence on the planning of the programs.

However, it is felt that a chronological report on the growth of the programs in operation in Maine, and the addition of new programs during that period will be appropriate prior to the publication of the paper. It may even whet the reader's appetite for more to come!

1944

What programs were in operation at this time?

After the Federal Social Security Act was passed in 1935, statewide programs of Maternal and Child Health and Crippled Children Services were set up in Maine. Orthopedic Clinics – 8 centers were started, also pediatric diagnostic clinics in 3 centers. A demonstration program to provide nursing service to mothers at time of delivery in Waterville and 8 surrounding towns was provided. A rheumatic fever program – clinics conducted in Portland and Lewiston were added; also speech service became available.

In 1943, Maine began the Emergency Maternity and Infant Care Program under federal financing, a nationwide program to provide medical and allied care for wives and children of World War II servicemen. This was discontinued in 1949 after serving 10,000 cases.

1945

The two divisions which had previously been combined in one Division of Medical Services (including Medical Services for the Blind, Cancer Control, Administration of Hospital State Aid and Licensing of Hospitals) were split into two divisions again and remained so until 1950. A full-time speech therapist was added to the Crippled Children Services. The Demonstration Maternity Program in Waterville was discontinued because of lack of interest and consequently lack of use of it.

1946

The number of Child Health Conferences increased and services expanded, including dental and nutrition in some of them, A prophylactic program – sulfadiazine medication was added to the Rheumatic Fever Program (changed to Penicillin a few years later). The first case of Congenital Heart Disease was referred to Johns Hopkins Hospital, Baltimore, Maryland for heart surgery. In the ensuing years, cases were sent to the Children's Hospital Medical Center in Boston, and later to hospitals in Maine as facilities became available.

Hospital licensing services, until then placed in MCH, were transferred to the newly created Division of Hospital Services. Also Cancer Control, Hospital State Aid and Medical Services for the Blind were transferred to other divisions.

1947-1953

A demonstration Rural School Health Project was set up "Down East" in Washington County in cooperation with the Department of Education. Special federal funds were appropriated for this program. The final year of the six years' study, communities in that area voted at their respective town meetings to participate in the cost – a splendid example of cooperation and teamwork on the state and local level. A report and evaluation were begun in 1953 and completed in 1955 with the assistance of several postgraduate students of the Harvard School of Public Health.

1947

A pilot Hard-of-Hearing Program started in Waterville, and over the years expanded to a statewide program. An immunization law was passed.

1949

A polio epidemic, largest outbreak with 446 cases, 57.3% of them paralytic cases threw an extra heavy load on Crippled Children Services. Considering the lack of professional staff, this was hard to cope with. Like a red thread, over more than 2 decades there was always a shortage of staff – at some periods the vacancies amounted to 33%, for a time to 50%!

A new Rheumatic Fever Center was opened in Bangor.

1950

Annual Pediatric Institutes for the General Practitioner were started, also yearly field trips for postgraduate students of Harvard School of Public Health. The latter was discontinued in 1958.

1953

A multi-discipline clinic for Cleft Palate cases was started at the Maine General Hospital, Portland, the first clinic to be conducted by a team. The team approach was used later for most of the new clinic programs, i.e., the Cystic Fibrosis clinic, the Adolescence clinic, the clinic for Mentally Retarded Preschool Children.

1954

Training programs for teams of physicians and nurses to improve premature care started.

*Former Director of the Maternal and Child Health and Crippled Children Services Division, State Department of Health and Welfare.

1956

Nutrition services were added to all cardiac clinics.

1956-1957

Congress appropriated special funds to MCH services for programs for the Mentally Retarded Child. Maine's plan was accepted and an evaluation clinic for Mentally Retarded Preschool Children was started in Waterville on a monthly basis – very soon these sessions increased to 2-3 a month.

1957

A Cystic Fibrosis Program was established with one clinic center in Portland.

The decline in Rheumatic Fever cases and the rapid increase in Congenital Heart case referrals led to a prevalence of these and subsequently to a change in the name of the program to "Cardiac Program."

1959

A pilot program for Adolescents was begun with a monthly clinic held at the Maine Medical Center in Portland.

The first International Conference on Mental Retardation was organized by the Division of Maternal and Child Health and the Pineland Hospital and Training Center, Pownal. This conference, the first of its type, was a full success. It was held in Portland and was attended by about 700 delegates from 40 states of this country, and from 35 foreign countries. Out of this a permanent committee was organized. The second International Conference was conducted in Vienna, Austria in 1961, again with participation of MCH and Pineland officials as active committee members. The third one was held in Copenhagen, Denmark. MCH secured for the first, as well as for the second conference grants of $10,000 each from the Lt. Joseph P. Kennedy, Jr. Foundation for publication of the proceedings.

The immunization law was amended.

1960

As mentioned in the beginning, there were some regressions, i.e., steps taken backwards. The decentralization of the orthopedic program in Aroostook County had to be discontinued. And a few years earlier the same had to be done with the cardiac program in Portland. At that time there were 11 centers for orthopedic clinics.

A Public Health Training Program for the Pediatric resident at the Central Maine General Hospital, Lewiston was offered by MCH. A 6 months training period was set up within the 2 years' residency program and approved by the Residency Review Committee for Pediatrics. The program was successful in providing experience in a well-rounded public health program on state, district and local level, especially emphasizing the set-up in a rural area. It could not be repeated because the hospital has not had a pediatric resident since.

1962

A special dental program for cases of handicapped children, including mentally retarded children was started at the Maine Medical Center, Portland.

A screening test for Phenylketonuria (Ferric chloride testing) had been started in Child Health Conferences several years previously. In 1962, Guthrie's bacterial inhibition assay method for testing PKU became available. The Division of Maternal and Child Health in cooperation with the Diagnostic Laboratory participated in the national evaluation of this new screening test.

1963

The testing was extended to statewide testing. (A law requiring this was passed in 1965).

Vision screening of the 3-year olds to prevent amblyopia began on a state-wide basis. This program was set up with the cooperation of the Division of Research and Vital Records, the Division of Eye Care and Special Services and the Division of Public Health Nursing. A suitable testing chart was developed and the testing kit mailed to the parent of the preschool child. It is believed that the Maine program was the first of its kind to undertake the vision testing of the 3-year old on a statewide mass-mailing basis.

1964

The management of the orthopedic clinic in Portland was transferred to the Maine Medical Center – Outpatient Department. This was considered a trial run for further transferrals.

Incidentally, it should be stressed that only the continuous assistance and cooperation of the public health nurses made it possible to have successfully working Crippled Children and Maternal and Child Health programs on a statewide basis. This has been fully appreciated during all these years.

Also the nutrition services have been very active and expanding as well as both consultative service and educational activities during the 20-years' period.

1965

A second center of the evaluation clinic for Mentally Retarded Children was added at the Central Maine General Hospital, Lewiston; a second center for the Cystic Fibrosis program at the same hospital had been started a few years earlier.

Educational activities: This report would not be complete if the educational activities pertaining to them were not mentioned. Among these, yearly revised schedules for immunization were issued; lectures were given to physicians, nurses, social workers and lay people; (for several years these lectures included several at Harvard University, School of Public Health) many articles were written for the *Maine Medical Journal* as well as for the *Weekly Bulletins* of the Department; also the Division participated in the 2-years' study of Child Health Services in Maine (1945-1947).

Statistics:	*1945*	*1964*
Infant Death Rate	46.6	23.5
Maternal Mortality Rate	24.0	5.7

The Infant Mortality Rate dropped 50% within the 2 decades, the Maternal Mortality Rate to one-fifth. Still, we have not reached the irreducible minimum! The Maine Rates run parallel to the national figures, usually a little lower since 1953.

Continued on page 274

The Journal of the Maine Medical Association

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Across The Desk

Malpractice Suits Bring Increases In Insurance Premiums For Doctors

The rising cost of malpractice claims across the country is forcing a general increase in premiums in many states for physicians' and surgeons' professional liability insurance, a national insurance ratemaking organization said recently.

The National Bureau of Casualty Underwriters – which determines premium rates on professional liability insurance for its affiliated companies – announced that rates are being revised in 30 states and the District of Columbia.

The rate changes are effective November 22 except that the effective date is December 20 for Texas and January 3, 1968 for California.

The NBCU also announced a new classification which will include anesthesiologists, neurosurgeons, obstetricians-gynecologists, orthopedists, plastic surgeons, and otolaryngologists who perform plastic surgery. These specialists will pay higher rates than would have applied if this change had not taken place.

Following are the states where rates are being revised and the percentage changes in rate level. In ten of the states the revisions do not result in any change in the overall statewide rate level.

Alabama	+16.0
Alaska	No change
Arizona	+50.0
Arkansas	+15.0
California	+32.6
Colorado	+30.0
Connecticut	+10.0
Delaware	+30.0
District of Columbia	No change
Georgia	+10.0
Idaho	+10.0
Indiana	No change
Iowa	+10.0
Maine	No change
Massachusetts	No change
Michigan	+20.0
Mississippi	No change
Missouri	+15.0
Montana	+20.0
Nebraska	No change
Nevada	No change
New Hampshire	—10.0
New Mexico	+20.0
Ohio	+10.0
Oregon	+20.0
South Dakota	No change
Texas	+25.0
Utah	+30.0
Vermont	No change
Washington	+48.0
Wyoming	+10.0

In the five year period from 1959 through 1963, the NBCU pointed out, Bureau companies sustained large underwriting losses on professional liability coverages for both physicians and surgeons.

On the physician classes, losses and company operating expenses amounted to $140 for each $100 in premiums during 1959-1963. This means that companies sustained an underwriting loss of $40 for each $100 of premiums.

On the surgeon classes, losses and expenses totaled $151 for each $100 in premiums during the same period, resulting in an underwriting loss of $51 for each $100 of premiums.

The NBCU said that, in view of the extremely adverse experience in these lines, these rate revisions must be considered "moderate."



County Society Notes

WASHINGTON

The regular meeting of the Washington County Medical Society was held on September 26, 1967 at the Down East Community Hospital, Machias, Maine. Nine members and guests were present. Robert G. MacBride, M.D., President of the Society, presided at a short business meeting during which he appointed a nominating committee consisting of Hazen C. Mitchell, M.D. of Calais, Maine, E. B. Johnston, M.D. of St. Stephen, N.B. and Rowland B. French, M.D. of Eastport, Maine. The duties of this committee are to nominate a President, Vice-President, Secretary-Treasurer and alternate delegate to the Maine Medical Association to be presented for action at the annual meeting in October.

Dr. Johnston introduced the guest speaker Antonio Trias, M.D., Instructor in Orthopedics, Dalhousie University. Dr. Trias spoke on "Office and Hospital Orthopedics." He had various models of orthopedic equipment present to better show the various types of fractures that could be handled by open reduction and by closed reduction. Several cases were presented by the doctors present and discussed quite thoroughly by Dr. Trias.

The regular meeting of the Washington County Medical Society was held on October 30, 1967 at the Down East Community Hospital, Machias, Maine with eight members and guests present. The first part of the meeting consisted of a discussion of a recent meeting with Dr. Manu Chatterjee, Program Co-ordinator for Maine's Regional Medical Program, Heart Disease, Cancer, Stroke and Related Diseases. It was felt that all members of the Society should be aware of this program and the opportunities for furthering their own education as well as a development of all hospitals in the county. It was voted to sponsor a "conditioning course" in A. Grantley Read's Basic Technique for Expectant Mothers. It would be available to all, at a nominal fee. There was considerable discussion on the Maternal and Infant Care Program and it was voted to invite Dean H. Fisher, M.D. down to further explain any changes or proposed changes in the program.

The following members were elected as officers for the ensuing year:

President, Walter A. Mendyka, M.D., Machias
Vice-President, John W. McAllister, M.D., Machias
Secretary-Treasurer, Karl V. Larson, M.D., East Machias
Board of Censors, John Kazutow, M.D., Columbia Falls (3 yrs.)
Delegate to the M.M.A. House of Delegates: James C. Bates, M.D., Eastport. Alternate: Robert G. MacBride, M.D., Lubec.

The Washington County Medical Society met on November 20, 1967 at the Denny's River Inn, Dennysville, Maine with seven members and guests present.

John Kazutow, M.D. was elected as Washington County representative to the Health Insurance Committee of the M.M.A.

There was again considerable discussion on the Maternal and Infant Care Program. It was thought best to invite or at least write to Dr. Thompkins of Washington, D.C., head of the program, to see whether or not he would attend a meeting of the Washington County Medical Society, or write and give any further changes acceptable to the Medical Society. There was also considerable discussion on the need for a Pathologist to supply the various hospitals in the county, and also to act as Chief Medical Examiner for the county to investigate medical-legal deaths, as well as autopsies on cases, as needed. They also discussed the Heart Disease, Cancer, Stroke

and Related Diseases program, and hoped to make further use of this. One of the members will attend the December 5th meeting with Manu Chatterjee, M.D. The members also are desirous of inviting the dentists to the next meeting which they plan to have on some type of State planning such as the Keogh plan or related subjects.

KARL V. LARSON, M.D., *Secretary*

ANDROSCOGGIN

A meeting of the Androscoggin County Medical Association was held at the Central Maine General Hospital, Lewiston, Maine on October 19, 1967. The meeting was called to order by the President, Daniel R. Shields, M.D. with fourteen members present.

Ralph A. Goodwin, Sr., M.D. presented a resolution on the death of Frederick L. Chenery, Jr., M.D. It was moved and voted to inscribe a copy on our records, and to send a copy to the Maine Medical Association and to the family.

Joseph J. Rando, M.D. introduced the speaker of the evening, Mr. Carl Cutler of Auburn. He demonstrated the various models of dictating machines explaining the advantages and the drawbacks of each type. Duplicating and copying machines were also demonstrated with various types of materials.

DONALD L. ANDERSON, M.D., *Secretary*

KENNEBEC

The Kennebec County Medical Association met at the Jefferson Hotel in Waterville, Maine on October 19, 1967. The meeting was called to order by the President, Robert L. Ohler, M.D.

William E. Schumacher, M.D. recommended that the membership get out and vote on referendum regarding mental health facilities on November 7th.

A panel discussion was then conducted regarding The Doctor as a Witness with Mr. John Lund as moderator. The panel consisted of Mr. Lewis Naiman, Dr. Irving I. Goodof and Mr. Robert O'Connor.

LUCIEN F. VEILLEUX, M.D., *Secretary*

CUMBERLAND

The Cumberland County Medical Society met at Howard Johnson's in South Portland, Maine on November 16, 1967 with approximately seventy-five members and guests attending.

Mr. Robert Caplinger, representing the new General Electric plant in South Portland, spoke briefly on his company's need for medical services. Clement A. Hiebert, M.D. thanked the medical group for exceeding its quota in the recent drive of United Community Services.

Charles W. Capron, M.D. announced that Albert M. Rogers, M.D. has replaced Dr. Moulton on the Utilization Committee for extended care facilities. Thomas F. Conneen, M.D. indicated that many nursing homes in this area are being forced to close due to the lack of sprinkling systems. After a lengthy discussion involving many of the members, a suggestion was made that the Medical Society help to publicize the situation.

Thomas A. Martin, M.D. read a resolution on the death of J. Foster Wellington, M.D. It was voted that a copy of the resolution be spread upon the records of the Medical Society and that a copy be sent to Mrs. Wellington as well as to each of the hospitals which Dr. Wellington served so faithfully.

Asa C. Adams, M.D., President-elect of the Maine Medical Association, presented an award to George W. Hallett, Jr., M.D. in recognition of his meritorious service in Vietnam.

Charles R. Glassmire, M.D. reported on matters pertaining to the Maine Medical Association. He also asked for suggestions for a member of the editorial board of the Maine Med-

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DISTINGUISHING CHARACTERISTICS OF A GROUP OF NON-FERMENTING GRAM-NEGATIVE BACTERIA[29]

Characteristics	*Pseudomonas*	*Herella*	*Mima*	*Alcaligenes*
Morphology	coccoid to short or medium length rods, straight to sl. curved, occ. chains	coccoid to diplo coccoid, some rod occ. filaments	coccoid, some rods, some chains	predominately coccoid, some rods
Action on blood	lysis, greening, browning	— to beta	— to beta	alpha lysis brown
Gas from glucose	—	—	—	—
Oxidative or fermentative	O	O	—	—
Glucose	A	A	—	—
Xylose	A	A	—	—
Mannitol	—	—	—	—
Lactose	—	— or late	—	—
Sucrose	—	—	—	—
Maltose	—	—	—	—
10% glucose slant	A	A	ALK	ALK
10% lactose slant	ALK	A	ALK	ALK
Catalase	3-4+	4+	2-4+	+
Oxidase	+	—	— (+)	+
Growth on				
Nutrient broth	+	+	+	+
MacConkey	+	+	+ (—)	+
SS	+	— (+)	— (+)	+
Citrate	+	+	+ (—)	— (±)
Urea	—	var.	—	—
Nitrate	+ gas	—	—	— (+ gas)
Indole	—	—	—	—
H_2S	—	—	— to 1+	—
Methyl Red	—	— to ±	—	—
Voges-Prosque	—	—	—	—
Gelatin	+	— or +	—	var.
Litmus Milk	pepton.	var.	— to alk.	alk.
Motility	+	—	—	+ (—)
Pigment	sl. pink, soluble brown	—	—	—

REACTIONS PRODUCED BY THE NONFERMENRATIVE GRAM NEGATIVE BACILLI ON BACTO-SELLERS DIFFERENTIAL AGAR[42]

Organism	*Slant Color*	*Butt Color*	*Band Color*	*Fluorescent Slant*	*Nitrogen Gas*
P. aeruginosa	green	blue or no change	sometimes blue	yellow green	produced
B. anitratum or H. vaginicola	blue	no change	yellow	absent	absent
M. polymorpha	blue	no change	absent	absent	absent
Alkaligenes faecalis	blue	blue or no change	absent	absent	produced

REACTIONS OF 48 CULTURES ON BACTO-SELLERS DIFFERENTIAL AGAR

No.	*Source*	*Acid*	*Butt*	*Slant*	*Gas*	*Fluorescence*	*Organism*
1	stock culture	—	blue	green	—	+	Pseudomonas sp.
2	stock culture	+	no change	blue	—	—	Herella
3	stock culture	—	no change	blue	—	—	Mima
4	wound	—	blue	green	+	+	Pseudomonas
5	urine	—	blue	green	+	+	Pseudomonas
6	abscess	—	blue	green	+	+	Pseudomonas
7	stool	—	blue	green	+	+	Pseudomonas
8	urine	+	no change	blue	—	—	Herella
9	trachea tube	—	blue	green	—	+	Pseudomonas sp.
10	sputum	—	blue	green	—	+	Pseudomonas sp.
11	stool	—	blue	green	+	+	Pseudomonas
12	floor	+	no change	blue	—	—	Herella
13	bed stand	+	no change	blue	—	—	Herella
14	sputum	—	blue	green	+	+	Pseudomonas
15	sputum	—	blue	green	+	+	Pseudomonas
16	wound	+	no change	blue	—	—	Herella
17	stool	—	blue	green	+	+	Pseudomonas
18	stool	—	blue	green	+	+	Pseudomonas
19	sputum	—	blue	green	+	+	Pseudomonas
20	sputum	+	no change	blue	—	—	Herella
21	sputum	—	blue	green	+	+	Pseudomonas
22	sputum	—	blue	green	+	+	Pseudomonas
23	throat	—	blue	green	+	+	Pseudomonas
24	urine	—	blue	blue	+	—	Alcaligenes
25	urine	—	blue	green	—	+	Pseudomonas sp.
26	foot abscess	+	no change	blue	—	—	Herella
27	stool	—	blue	green	+	+	Pseudomonas
28	sputum	—	blue	green	+	+	Pseudomonas
29	sputum	—	no change	blue	+	—	Alcaligenes
30	spinal fluid	—	no change	blue	—	—	Mima
31	stool	—	blue	green	+	+	Pseudomonas
32	sputum	—	blue	green	+	+	Pseudomonas
33	urine	—	blue	green	+	+	Pseudomonas
34	urine	—	blue	green	+	+	Pseudomonas
35	sputum	—	blue	green	+	+	Pseudomonas
36	urine	—	blue	green	+	+	Pseudomonas
37	wound	—	blue	green	+	+	Pseudomonas
38	wound	—	blue	green	+	+	Pseudomonas
39	abdomen	—	blue	green	+	+	Pseudomonas
40	blood	—	no change	blue	—	—	Mima
41	urine	+	no change	blue	—	—	Herella
42	wound	—	blue	green	+	+	Pseudomonas
43	urine	—	blue	green	+	+	Pseudomonas
44	vagina	—	no change	blue	+	—	Alcaligenes
45	sputum	—	blue	green	+	+	Pseudomonas
46	abdominal cavity	—	blue	green	+	+	Pseudomonas
47	heart blood (autopsy)	—	no change	blue	+	—	Alcaligenes
48	urine	—	blue	green	+	+	Pseudomonas

wounds, urine, cerebral spinal fluid, synovial fluid, pleural effusions, ear and respiratory tract infections, and blood.[19] No carbohydrates are fermented by *Mima polymorpha.*[20]

On a gram stained smear, gram negative diplococci forms are predominant.[21] *Mima polymorpha* may be present as intracellular or extracellular gram negative diplococci which are morphologically identical to the *Neisseria* organisms. In one study 40% of a group of apparent gram negative diplococci, which could easily be mistaken for Neisseria gonorrhoeae, were isolated as *Mima* group.[22]

Mandel described a medium developed for the isolation of *Mima* and *Herella* organisms.[23] The medium takes advantage of the inhibitory action of bile salts on gram positive bacteria, the fermentative activity of the *Enterobacteriaceae,* and the biochemical inactivity of the *Mima-Herella* groups.[24] On this medium, which incorporates into its formula lactose and maltose along with bile salts, *Mima* and *Herella* will produce no change in the medium, while acid producing bacteria of the *Enterobacteriaceae* group will produce a yellow area due to fermentation; the growth of gram positive organisms is inhibited.[25]

Alcaligenes faecalis is also a cocco-bacillus which is non fermenting on triple sugar iron agar slants. Its colo-

ical Journal and for a physician for the winter cruise of the Maine Maritime Academy.

Dr. Capron announced that the nominating committee will consist of Drs. Philip P. Thompson, Jr., Chairman, William F. Taylor and William L. MacVane, Jr.

Dr. MacVane introduced the new Portland City Health Officer, Dr. John Davy who discussed problems of local and regional health departments.

STANLEY B. SYLVESTER, M.D., *Secretary*

LINCOLN-SAGADAHOC

A meeting of the Lincoln-Sagadahoc County Medical Society was held on November 21, 1967 at The Ledges in Wiscasset, Maine. The meeting was called to order by the President, Charles E. Burden, M.D.

Dr. Burden then read a letter by the Secretary noting the death of Rufus E. Stetson, M.D. and the loss which will be felt by our membership.

The decision to assess Society dues of $30.00 a year was unanimously approved.

Dr. Bostwick then presented a program of slides of his medical hegira to the Southwest.

GEORGE W. BOSTWICK, M.D., *Secretary*

New Members

AROOSTOOK

Paul S. Hamlin, M.D., 122 Academy St., Presque Isle 04769
G. Vernon A. MacDonald, M.D., Box 228, Ashland 04732

CUMBERLAND

Edward A. Greco, Jr., M.D., 12 Pine St., Portland 04102
Richard A. Kemp, M.D., 1705 Meadowbrook Dr., Winston-Salem, N.C. 27104
Henry M. Trask, M.D., 24 Hersey St., Portland 04103

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Bella S. Strauss, M.D., 50 Union St., Ellsworth 04605
James H. Thaidigsman, M.D., 50 Union St., Ellsworth 04605

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Terrance J. Sheehan, M.D., 89 Hospital St., Augusta 04330

KNOX

Lincoln Opper, M.D., Knox Co. Gen. Hosp., Rockland 04841

LINCOLN-SAGADAHOC

Frank O. Avantaggio, Jr., M.D., 50th TAC Hosp., APO 09109, New York
Horace B. Taylor, M.D., Church Sq., Boothbay Harbor 04538

PENOBSCOT

Robert P. Andrews, M.D., 489 State St., Bangor 04401
Ernesto G. Ballesteros, M.D., 292 Hammond St., Bangor 04401
Stanley J. Evans, M.D., 336 Mt. Hope Ave., Bangor 04401
Jack N. Meltzer, M.D., 128 Broadway, Bangor 04401
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WASHINGTON

Walter A. Mendyka, M.D., Machias 04654

Deceased

ANDROSCOGGIN

Frederick L. Chenery, Jr., M.D., Monmouth 04259, September 25, 1967

CUMBERLAND

William R. McAdams, M.D., 723 Congress St., Portland 04102, November 21, 1967
J. Foster Wellington, M.D., 396 Brighton Ave., Portland 04102, October 9, 1967

FRANKLIN

George L. Pratt, M.D., 37 Lawrence St., Fairfield 04937, November 4, 1967

KENNEBEC

William D. McLarn, M.D., 222 Main St., Waterville 04901, February 21, 1967
Pierre E. Provost, M.D., 48 Green St., Augusta 04330, November 16, 1967

LINCOLN-SAGADAHOC

Rufus E. Stetson, M.D., Damariscotta 04543, November 13, 1967

PENOBSCOT

Harold A. Pooler, M.D., Bangor State Hosp., Bangor 04401, November 11, 1967
Cecil J. Metcalf, M.D., 1010 Memorial Dr., Cambridge, Mass. 02138, August 7, 1967

DEPARTMENT OF HEALTH AND WELFARE — *Continued from page 270*

Cases registered with Crippled Children Services:

1945	1964
minus 4000	plus 15000

The number of cases grew at an even rate.

SUMMARY

In reviewing this 20-year period, it is felt to have been an exciting time, due largely to the advances in medicine. The use of the antibiotics changed the outlook of several diseases previously prognosed as fatal; made others amenable to treatment and rehabilitation. Exciting achievements, such as heart surgery – including open heart surgery, exchange transfusions of the newborn, and more recently, intrauterine treatment of the fetus, in addition to treatment of metabolic errors, brought with them changes in the planning of the programs. As mentioned in the beginning, medical advances brought about the disappearance or substantial reduction of communicable diseases such as polio, diphtheria, measles. Some diseases declined such as syphilis and other venereal diseases although an increase has been observed during recent years. On the other hand, new diseases appeared and others, such as infectious hepatitis, reached epidemic proportions during recent years. Cancer, especially leukemia, increased considerably. Retrolental fibroplasia appeared as a new condition and disappeared a few years later when it was found that the cause was the overtreatment of premature babies with oxygen.

Special emphasis was placed on the preventive phase of Maternal and Child Health, at all times.

Progress and expansion of most of the phases of the Maternal and Child Health and Crippled Children Programs over the years 1945-1965 developed at an exceptionally fast rate.

Maine Heart Association Notes

116 State Street, Augusta, Maine

Coronary Care Unit — Promise And Challenge

"Five years have elapsed since the opening of the first coronary care unit. . . . A number of factors have contributed to acceptance of the concept of coronary care and to its rapid implementation. Foremost is the high incidence of the disease and its staggering mortality. . . . Approximately 30 percent of those hospitalized with an acute attack succumb to their illness. . . . Sudden death from myocardial infarction is frequently reversible when it is due to a deranged heart rhythm. In the past, salvage of patients with catastrophic arrhythmias was fortuitous and depended on the presence of a knowledgeable physician and the proximity of resuscitation equipment. The coronary care unit is . . . the translation of such an accidental presence to a deliberate and continuous surveillance of cardiac rhythm in patients with acute myocardial infarction.

The initial objectives of the coronary care unit have now been broadened to the prevention of the need for resuscitation. This is based on the fact that control of minor arrhythmias, . . . prevents the occurrence of major electrical disorganization of the heart beat. . . .

The coronary care unit functions most effectively when staffed with highly trained nurses who are permitted to assume responsibilities hitherto within the exclusive domain of the physician. . . . The time for effective action is brief and frequently does not permit delay for arrival of a physician. Not only must the nurse be delegated authority for enacting the entire repertoire of essential resuscitative maneuvers, but she must also be mandated to treat potentially life-threatening arrhythmias. The nurse must therefore receive comprehensive instruction in the identification and management of diverse arrhythmias . . . one of the main functions of the coronary care unit is the training of nurses, and this must be evolved as an ongoing and continuous program. A spirit of cooperative endeavor between medical and paramedical personnel is the hallmark of a well functioning unit."

Submitted by Jacob B. Dana, M.D., Maine Heart Association.

Reference — Lown, B. and Shillingford, J. P., Editorial, American Journal of Cardiology, Vol. 20, pages 449-450, 1967.



when he just can't sleep

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[031767]

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AMERICAN CANCER SOCIETY - MAINE DIVISION, INC.
Brunswick, Maine

The "Image" of Cancer*

STANLEY WARREN**

How do people feel about doctors? Just which traits doctors as a class exhibit do people like or dislike? Does the public feel that doctors endorse regular physical checkups including cancer tests? And, as a corollary, if the public felt that doctors were in favor of regular checkups, would they be more likely to go for them?

If their physicians advised it, nine of ten adults queried in the recent nationwide survey conducted by the American Cancer Society reported that they would have annual physical checkups, including cancer tests.

Implications from this strong answer are that the public's attitude towards physicians is cordial and trusting. This 90% total of those who say they would go for a checkup if advised to do so contains all demographic elements — men and women, higher status people and lower status people, young and old, higher income and lower income brackets. Even a clear majority (88%) of those who do not go for regular checkups, say they would go if their doctor favored it.

Only a tiny minority, roughly 6%, said they would not have a checkup even if their doctor told them to do so. The reason given for this attitude towards one's health was that if they felt "healthy," there could be no "reason" for an examination. Among other reasons for not going for checkups regularly were financial cost, a distrust of doctors and fear. Based on the question: "Suppose your doctor told you you were not getting physical checkups that includes cancer tests often enough. Would you do it?" Here's a chart of the survey findings:

		Sex		*Age*		
	Total	*Men*	*Women*	*20-29 Years*	*30-49 Years*	*50 Years And Over*
Would have check-up if doctor told them to have it	90%	88%	93%	91%	90%	90%
Would not have check-up if doctor told them to have it	6	7	4	5	6	6
DK, NA	4	5	3	4	4	4
Total	100%	100%	100%	100%	100%	100%

When asked how they thought doctors felt about taking regular cancer tests and physical examinations, a surprisingly large segment (43%) stated flatly they had no idea how doctors felt about tests. One of those queried answered that she "had been going to him (her doctor) for 40 years and if he thought it was necessary he would have told me." Another stated "My doctor's never mentioned it. I had a bum spell and I told him I should have a real good checkup, but he didn't seem to think it was necessary."

Yet, just as many stated they believed that doctors felt people should have regular checkups. In view of the favorable light and esteem in which doctors are held, this figure is hardly astonishing. But, at the other end of the line, a total of 14% said they were of the opinion that doctors did not feel it necessary for people to have checkups.

While this uncertainty about the reaction of physicians to cancer tests extends across all segments surveyed, it was more common among men, lower status people, oldsters — the groups traditionally less likely to go for examinations. And of those who believe that doctors feel tests are unnecessary, some 37% gave as their main reason the fact that their doctor never mentioned it. Included in this type of answer were such comments as: "the doctor never told me," "the doctor never said anything about regular checkups," "the doctor would have told me if I needed it," etc.

How should these answers about the attitudes of doctors towards this problem be interpreted? While several possible answers can be offered, the main reason, beyond any question, people give for not going for checkups is, simply, they do not believe their doctors want them to go. This is despite the overwhelming percentage of non-goers who freely admitted that, prodded by their physicians, they would certainly be willing to go.

There exists, however, another group of non-goers about whom it could be claimed they are taking refuge in rationalization, or possibly indulging in some self-kidding.

Of course there is that 6% of the public who feel that doctors only advise undergoing tests for cancer out of pure avarice. Tests, claim this minority group, are just a subtle way a doctor has to "make more money." Thus it is obvious that this small core who insist they wouldn't go for a checkup even if prodded by a reputable physician is proof of hostility towards physicians. This hostility seems to stem from a basic distrust of doctors and has little or nothing to do with the doctors' attempts to "sell" checkups.

Many doctors, it must be admitted, do not insist on nor recommend regular checkups. The survey pointed out that 14% of the public said their doctors did not feel it necessary to take physical exams including cancer tests.

Dr. Leonard W. Larson, former ACS president, perhaps, put it most forcefully when he called on "every physician to demonstrate to the patient that any complaint however trivial, is welcome and that he endorses the annual checkup as the best defense against cancer. At the same time," Dr. Larson stressed, "no physician, anywhere, must ever turn aside one who comes to him with a complaint about a persistent cough or what seems to him as persistent indigestion or any other warning signal of cancer. Let us set about to tear down the curtain of doubt that keeps patient and physician apart," he concluded.

*Part four of a six-part series from American Cancer Society News Service Release.

**News Editor, American Cancer Society, Inc.

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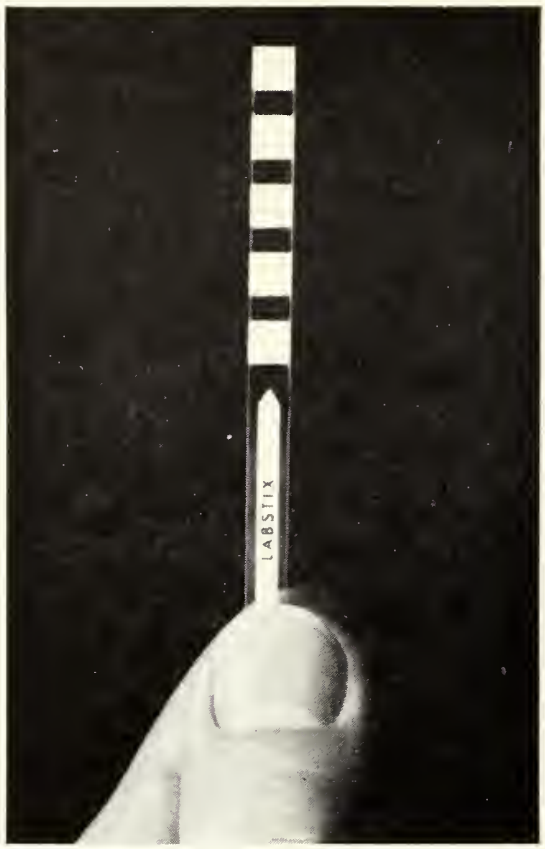
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Take five...

LABSTIX® provides 5 important urinary findings*—on a single reagent strip! That's *more* information than you can get from any other single reagent strip. You know the results in just 30 seconds—while the patient is still in your office—and readings are reliable and reproducible. LABSTIX is easy to handle, too. Never goes limp, even when wet, because it's made with clear, firm plastic. And results with LABSTIX are easy to read—color contrast between the test areas and the transparent plastic is clearly defined. An unexpected "positive" from testing with LABSTIX may help in detecting hidden pathology before marked symptoms are manifest.

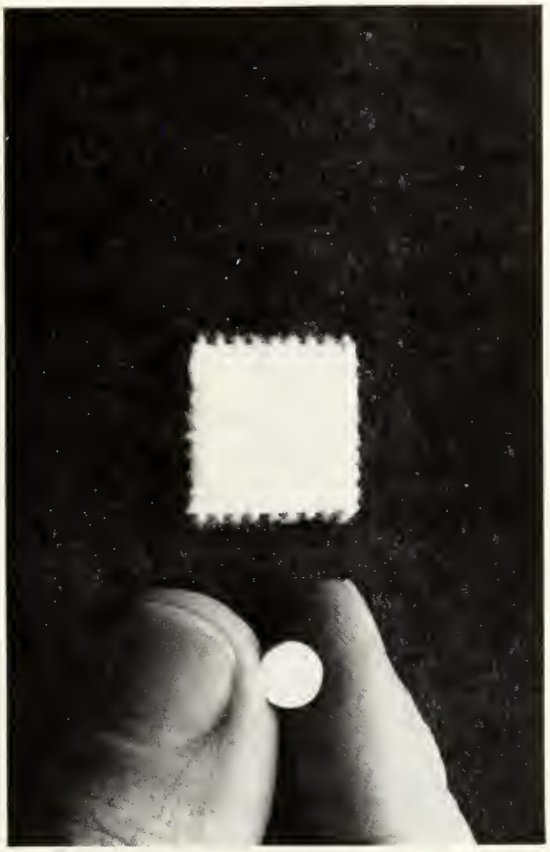
*Blood; ketones; glucose; protein, and pH.

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"When I couldn't even smell corned beef and cabbage,
I decided it was time for you, Doc."



Maybe he doesn't know when he's well off. But you might want to prescribe long-acting Novahistine LP anyway.

Two tablets in the morning and two in the evening will usually provide day and night relief by helping to clear congested air passages for normal, free breathing. Novahistine LP is formulated to provide continuous therapeutic effect for 8 to 12 hours. The decongestant ingredients help restore normal mucus secretion and ciliary activity—physiologic defenses against infection of the respiratory tract. Use cautiously in individuals with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution ambulatory patients that drowsiness may result. Each Novahistine LP tablet contains phenylephrine hydrochloride, 25 mg., and chlorpheniramine maleate, 4 mg.

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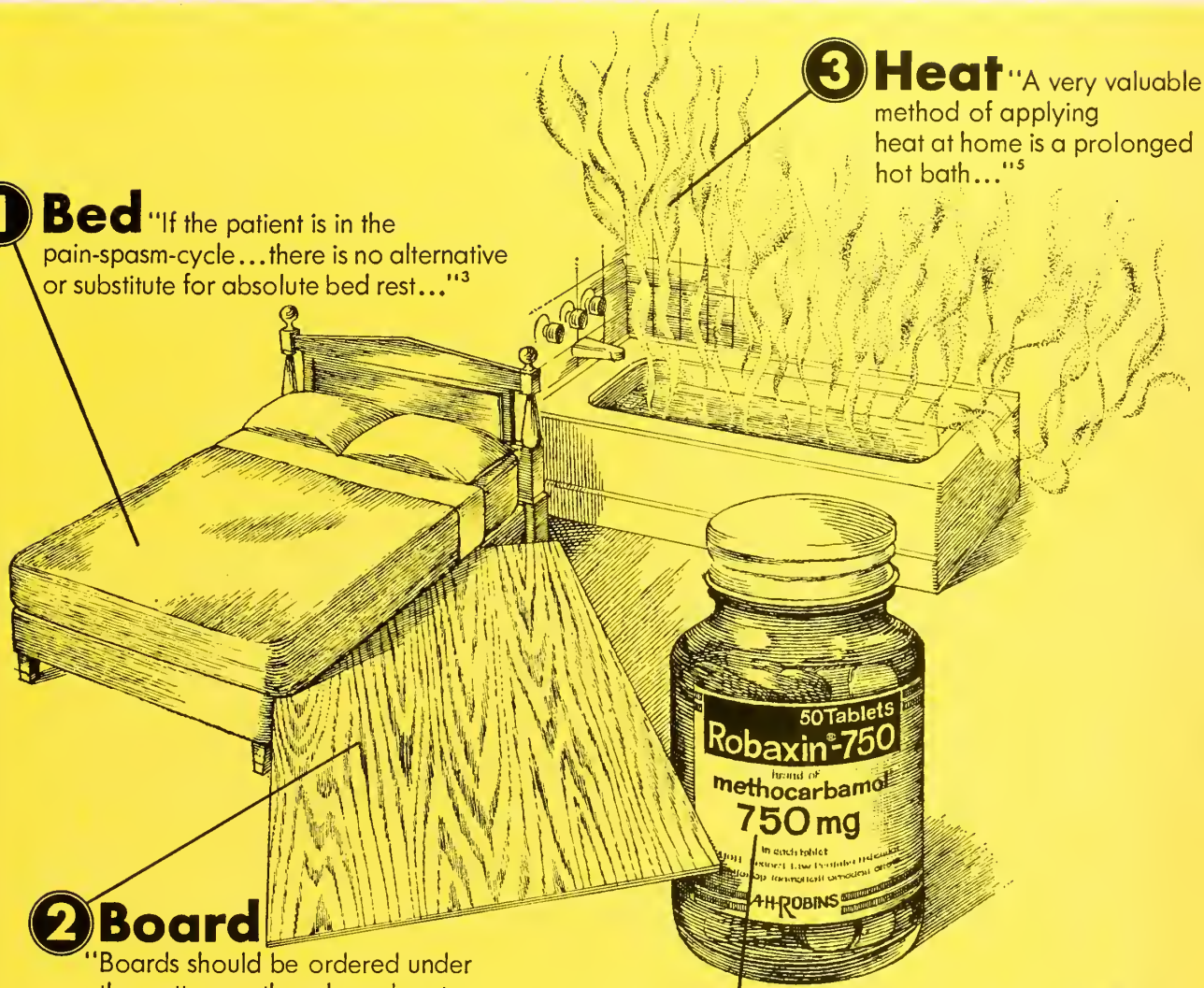
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LOW-BACK PAIN

A CONSERVATIVE, FOUR-POINT PROGRAM

The low back pain that is most frequently seen in general practice is mechanical in nature, i.e., postural back pain, joint dysfunction and acute back strain.[1,2] For this type of discomfort, a conservative regimen is usually sufficient to relieve aches and pains, and to help keep the patient functioning. Components of this basic program include:



1 Bed "If the patient is in the pain-spasm-cycle...there is no alternative or substitute for absolute bed rest..."[3]

2 Board "Boards should be ordered under the mattress...these boards act by immobilizing the spine..."[4]

3 Heat "A very valuable method of applying heat at home is a prolonged hot bath..."[5]

4 Robaxin®-750 (methocarbamol, 750 mg. capsule-shaped tablets) A well-tolerated[6] skeletal muscle relaxant, methocarbamol helps relieve spasm "...without interfering with normal tone and movement."[7] And there is little likelihood of sedation.[6]

Indicated for relief of skeletol muscle sposm. **Contraindicated in** hypersensitive potients. **Side Effects** (lightheadedness, dizziness, drowsiness, nouseo) moy occur rarely, but usually disoppeor on reduced dosoge. Hypersensitivity reoctions develop infrequently. See product literature for further details. **Also available:** Roboxin® Tablets (methocorbomol, 500 mg.) Roboxin Injectoble (methocarbamol, 1 Gm./10 cc.)

References: (1). Godfrey, C.M.: Applied Therop. 8:950, 1966. (2). Gottschalk, L.A.: GP 33:91, 1966. (3). Rowe, M.L.: J. Occup. Med. 2:219, 1960. (4). Cozen, L.: South Dokoto J. Med. 18:26, 1965. (5). Soto-Holl, R.: Med. Sc. 14:23, 1963. (6). Weiss, M. and Weiss, S.: J. Am. Osteopoth. A. 62:142, 1962. (7). Feuer, S.G., *et al.*: New York J. Med. 62:1985, 1962.

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"Yes, Doctor, the pain is gone."

'EMPIRIN'® COMPOUND with CODEINE PHOSPHATE gr. 1/2 No. 3

Each tablet contains: Codeine Phosphate gr. ½ (Warning—May be habit forming), Phenacetin gr. 2½, Aspirin gr. 3½, Caffeine gr. ½.

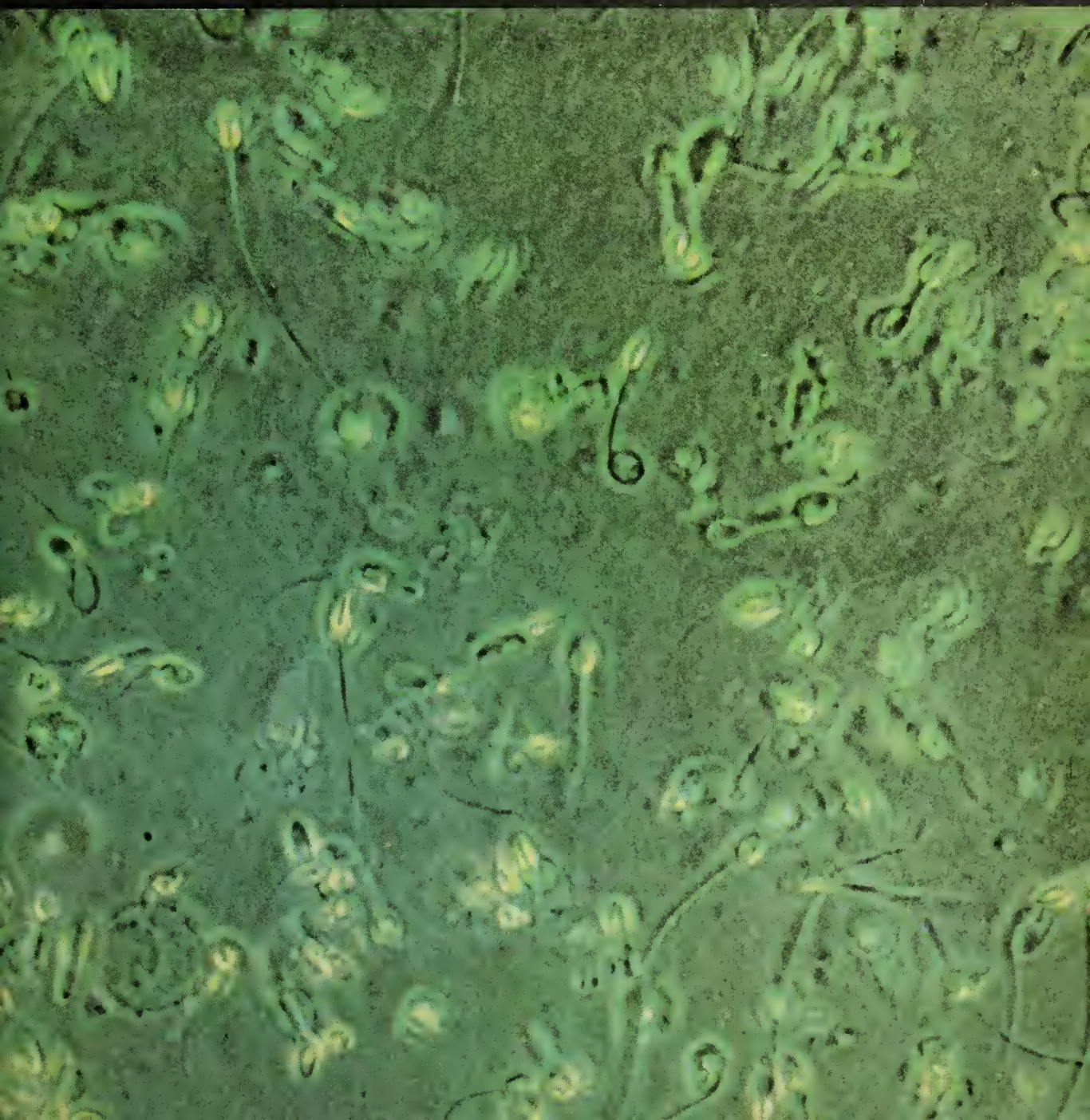
■ Despite introduction of synthetic substitutes, efficacy of 'Empirin' Compound with Codeine remains unchallenged.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N.Y.

When the talk turns to oral contraceptives, it makes medical sense to remember low-dose Norinyl®-1.

(norethindrone 1mg. & mestranol 0.05mg.)

Turn page for contraindications, precautions and side effects.



Reduction of oral contraceptive dosage to the lowest effective levels is a well-accepted principle of conservative medical practice. In keeping with this view, Norinyl is now also available as Norinyl-1, containing exactly one half the previous dosage of norethindrone and mestranol. Clinical experience has established that effective fertility control can be achieved with the same degree of reliability and safety with new Norinyl-1 when taken as directed.

What about switching patients from higher dosage forms?

In transferring patients to low-dose Norinyl-1 from higher-dosage oral contraceptives, some breakthrough bleeding may occur in the early cycles. In the majority of cases the bleeding episode is mild and self-limited. The long-term advantages of the lower dosage form should be weighed against the inconvenience of possible breakthrough bleeding in the individual patient.

Prescribing Information

Contraindications: Patients with any symptoms or history of thrombophlebitis, pulmonary embolism, liver dysfunction or disease, carcinoma of breast or genital organs, or undiagnosed vaginal bleeding.

Warnings: Discontinue medication pending examination if there is sudden partial or complete loss of vision, proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn. The safety of Norinyl-1 in pregnancy has not been demonstrated. If a patient misses two consecutive periods, pregnancy should be ruled out before continuing the medication. If she has not adhered to the prescribed schedule, pregnancy should be considered at the first missed period. Active ingredients of oral contraceptives have been detected in the milk of mothers who received these drugs; the significance to infants has not been determined.

Precautions: Pretreatment physical should include examination of the breasts and pelvic organs, as well as a Papanicolaou smear. If endocrine or liver function tests are abnormal during therapy, repeat tests are recommended after the drug has been withdrawn for two months. Following administration of drug, preexisting uterine fibromyomata may increase in size. Careful observation and caution are required for patients with symptoms or history of epilepsy, migraine, asthma, cardiac or renal dysfunction, cerebrovascular accident, psychic depression, and diabetes. In cases of undiagnosed vaginal bleeding, adequate diagnostic measures are indicated. Possible long-term effects of the drug on pituitary, ovarian, adrenal, hepatic or uterine function must await further studies. The physician should be alert to the earliest manifestations of thrombophlebitis and pulmonary embolism. The drug should be used judiciously in those young patients in whom bone growth is not complete. The age of the patient constitutes no absolute limiting factor, although treatment with Norinyl-1 may mask symptoms of the climacteric. The pathologist should be advised of Norinyl-1 therapy when relevant specimens are submitted.

Side Effects: The following have been observed with varying incidence in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms, breakthrough bleeding, spotting, change in menstrual flow, amenorrhea, edema, chloasma or melasma, breast changes (tenderness, enlargement and secretion), change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately postpartum, cholestatic jaundice, migraine, rash (allergic), rise in blood pressure in susceptible individuals, mental depression. Although the following side effects have been reported in users of oral contraceptives, no cause and effect relationship has been established: anovulation posttreatment, premenstruallike syndrome, changes in libido, changes in appetite, cystitislike syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption, and itching. The following occurrences have been observed in users of oral contraceptives (a cause and effect relationship has neither been established nor disproved): thrombophlebitis, pulmonary embolism, neuroocular lesions.

The following laboratory tests may be altered by the use of oral contraceptives: increased sulfobromophthalein and other hepatic function tests, coagulation tests (increase in prothrombin, factors VII, VIII, IX and X), thyroid function (increase in PBI and butanol extractable protein-bound iodine and decrease in T^3 values), metyrapone test, pregnanediol determination.

norethindrone — an original steroid from

SYNTEX

LABORATORIES INC., PALO ALTO, CALIF.

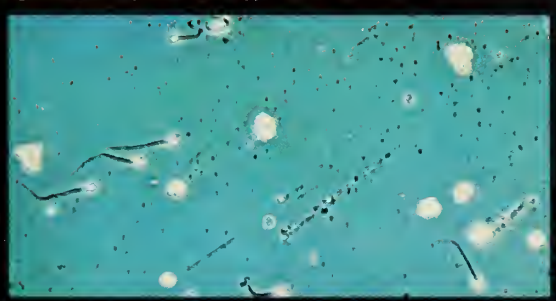
Here's why Norinyl-1 makes medical sense.

The effectiveness of Norinyl-1 as a low-dose oral contraceptive may be explained by its possible multiple action. In addition to its primary action of suppression of ovulation, Norinyl-1 may offer additional protective mechanisms... (1) creation of a cervical mucus that may be hostile to sperm penetration, and (2) development of an endometrium that may be out of phase with nidation. These effects are illustrated below.

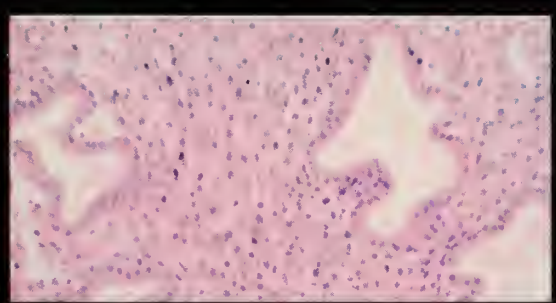
Untreated Patient



Cervical mucus at midcycle is usually thin and watery, with Spinnbarkeit (stretchability) of 15 to 20 cm.



Spermatozoa appear healthy, active, freemoving.

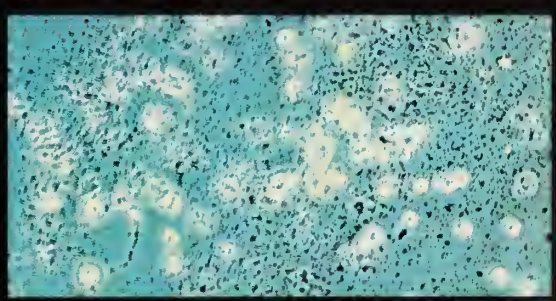


Endometrium of untreated patient is receptive to the fertilized ovum during secretory phase.

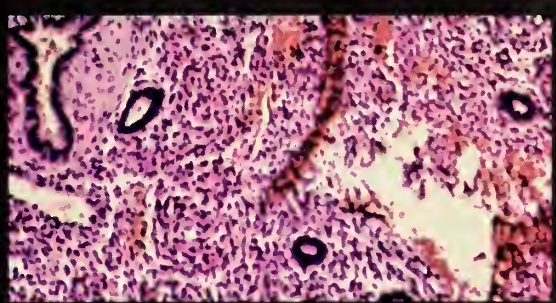
Norinyl-1 Patient



Cervical mucus at midcycle is scanty, viscous—with Spinnbarkeit of 1 cm. or less.



Immobile spermatozoa as they appear in cervical mucus taken from patient treated with Norinyl-1.



Norethindrone in Norinyl-1 accelerates secretory phase, suppresses glandular and vascular development.

Norinyl®-1

(norethindrone 1mg + mestranol 0.05mg) tablets

- new low dose of time-proved ingredients
- established norethindrone/mestranol ratio
- lower patient cost

An uncommon steroid for common inflammatory dermatoses

In everyday topical steroid therapy, Synalar produces rapid resolution of inflammation and itching in steroid-responsive dermatoses—and at relatively low cost to the patient.

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Synalar combines the advantage of earlier corticosteroid compounds with unique structural innovations. As a result, preparations of Synalar 0.01% and Synalar 0.025% have been reported to be more potent topically and significantly more effective than hydrocortisone 1.0%. The unique fluocinolone acetonide molecule provides one of the most useful topical corticosteroids for everyday practice.

Impressive clinical results in a wide range of dermatologic problems

The clinical efficacy of Synalar has been extensively documented in the world literature. Commonly encountered diseases such as allergic and contact dermatitis, eczematous and seborrheic dermatitis, and neurodermatitis respond rapidly to Synalar, often where previous therapy with other topical corticosteroids has failed.

Low patient cost for wider usefulness

With Synalar, a high degree of efficacy does not mean high price. And—a small quantity goes a long way. Thus, your patients can often obtain the "economy" of a hydrocortisone preparation with the proved efficacy of a potent, truly advanced steroid.

Synalar®
fluocinolone acetonide





Turn page for contraindications, precautions and side effe

For everyday topical steroid therapy

Synalar® 0.01%

fluocinolone acetonide provides economy in two practical dosage forms

For general use, the most economical and widely applicable concentration of Synalar is 0.01% Cream in a water-washable, vanishing cream base. Synalar Solution 0.01% is especially valuable in dermatoses involving moist, intertriginous areas or hairy sites where creams and ointments do not spread or penetrate readily. Synalar Solution is a unique dosage form—clear, nongreasy, cosmetically elegant.

Product Information

Contraindications: Tuberculous, fungal, and most viral lesions of the skin (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of the components. *Precautions:* Synalar preparations are virtually nonsensitizing and nonirritating. However, the solution may produce burning or stinging when applied to denuded or fissured areas. In some patients with dry lesions, the solution may increase dryness, scaling or itching. Where severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. *Side Effects:* Side effects are uncommon with topical corticosteroids. As with all drugs, however, a few patients may react unfavorably to Synalar under certain conditions. In such cases the agent should be discontinued and appropriate measures taken. *Availability:* Synalar (fluocinolone acetonide) Cream 0.025%—5, 15 and 60 Gm. tubes and 425 Gm. jars. Cream 0.01%—15, 45 and 60 Gm. tubes and 120 Gm. jars. Solution 0.01%—20 and 60 cc. plastic squeeze bottles. Ointment 0.025%—15 and 60 Gm. tubes. Neo-Synalar® (neomycin sulfate 0.5% [0.35% neomycin base], fluocinolone acetonide 0.025%) Cream—5, 15 and 60 Gm. tubes.

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Picture of bursitis

treated with Parafon Forte® TABLETS

Paraflex® (chlorzoxazone)* 250 mg.
Tylenol® (acetaminophen) 300 mg.

arafon Forte helps to relieve pain, estore mobility . . . stop pain-spasm feedback

lere is why. PARAFON FORTE provides:

nonsalicylate analgesic equal to aspirin for the relief f pain,[1,2] yet unlikely to produce the irritation to the astric mucosa so often associated with salicylate ierapy[3]

nd a skeletal muscle relaxant shown to have up to a -hour span of action,[4-6] and to retain effectiveness ven on continued administration,[5-7] but which does not ave the central effects of tranquilizing compounds.

rescribe PARAFON FORTE for lasting spasmolysis nd analgesia in sprains, strains, myalgias, low back ain, bursitis and other musculoskeletal disorders. our patients will appreciate the restored comfort nd lasting freedom of movement it usually provides.

Cautions and side effects: Use with caution in patients with known drug sensitivity. If a hypersensitivity reaction or symptoms suggestive of liver dysfunction are observed, the drug should be stopped. Occasionally, drowsiness, dizziness, lightheadedness, malaise, overstimulation or gastrointestinal disturbances may be noted; rarely gastrointestinal bleeding, allergic skin rashes, petechiae, ecchymoses, angioneurotic edema or anaphylactic reactions may have been drug associated. While *Paraflex* (chlorzoxazone) has been suspected as being the cause of hepatic toxicity in approximately eighteen patients, it was not possible to state that the dysfunction was or was not drug induced. ***Dosage:*** Two tablets q.i.d. ***Supplied:*** Scored, light green tablets, imprinted "McNEIL"—bottles of 100.

References: 1. Batterman, R. C., and Grossman, A. J.: Fed. Proc. *14*:316, 1955. 2. Goodman, L. S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 3, New York, The Macmillan Company, 1965, p. 331. 3. Roth, J. L. A., *et al.*: Gastroenterology *44*:146, 1963. 4. Conney, A. H., and Burns, J. J.: J. Pharmacol. Exp. Ther. *128*:340, 1960. 5. Settel, E.: Clin. Med. *6*:1373, 1959. 6. Berman, H. H., *et al.*: Dis. Nerv. Syst. *25*:430, 1964. 7. Darienzo, C.: Ibid., *27*:189, 1966.

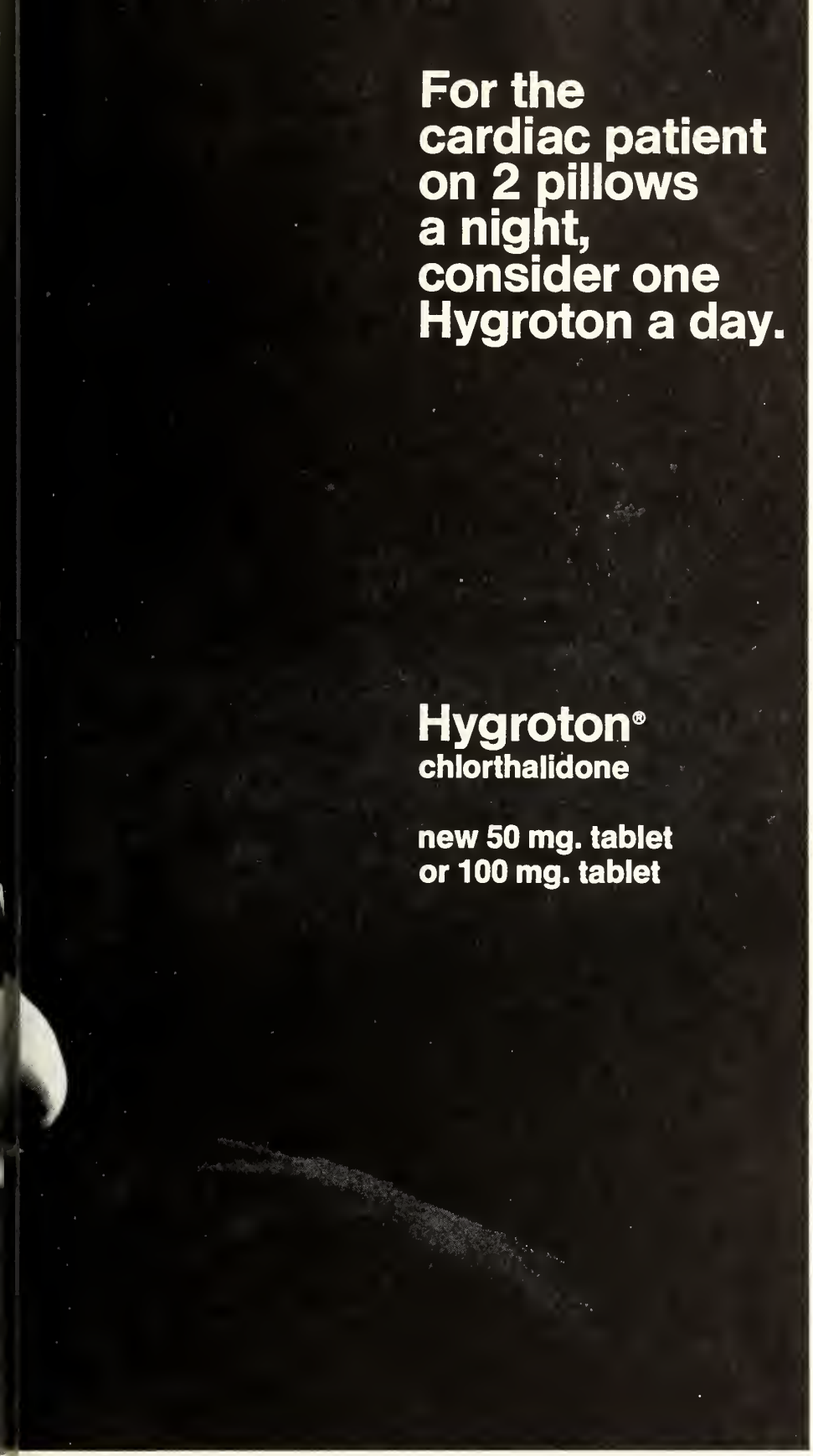
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*U. S. PATENT NO. 2,895,877

McNEIL LABORATORIES, INC., FORT WASHINGTON, PA.



Indications: Hypertension and many types of edema involving retention of salt and water.
Contraindications: Hypersensitivity and most cases of severe renal or hepatic disease.
Warning: With the administration of enteric-coated potassium supplements, which should be used only when adequate dietary supplementation is not practical, the possibility of small bowel lesions (obstruction, hemorrhage, and perforation) should be kept in mind. Surgery for these lesions has frequently been required and deaths have occurred. Discontinue enteric-coated potassium supplements immediately if abdominal pain, distention, nausea, vomiting, or gastrointestinal bleeding occur.
Use with caution in pregnant patients, since the drug may cross the placental barrier and adverse reactions which may occur in the adult (thrombocytopenia, hyperbilirubinemia, altered carbohydrate metabolism, etc.) are potential problems in the newborn.
Precautions: Antihypertensive therapy with Hygroton should always be initiated cautiously in postsympathectomy patients and in patients receiving ganglionic blocking agents or other potent antihypertensive drugs, or curare. Reduce dosage of concomitant antihypertensive agents by at least one-half. Barbiturates, narcotics or alcohol may potentiate hypotension. Because of the possibility of progression of renal damage, periodic determination of the BUN is indicated. Discontinue if the BUN rises or liver dysfunction is aggravated. Hepatic coma may be precipitated.
Electrolyte imbalance, sodium and/or potassium depletion may occur. If potassium depletion should occur during therapy, Hygroton should be discontinued and potassium supplements given, provided the patient does not have marked oliguria.
Take special care in cirrhosis or



She was the picture of arteriosclerotic heart disease in failure.
She couldn't sleep a wink without an extra pillow.
Then her doctor prescribed digitalis and Hygroton.

First, her cardiac output improved.
Then her breathing improved—
along with her urinary output.

Nights could be a lot more pleasant for patients like this in your practice.
Try it and see.

Hygroton therapy may also mean troublesome side effects for certain patients.
A summary of essential prescribing information is shown below.

severe ischemic heart disease and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended.
Adverse Reactions: Nausea, gastric irritation, vomiting, anorexia, constipation and cramping, dizziness, weakness, restlessness, hyperglycemia, hyperuricemia, headache, muscle cramps, orthostatic hypotension, aplastic anemia, leukopenia, thrombocytopenia, agranulocytosis, impotence, dysuria, transient myopia, skin rashes, urticaria, purpura, necrotizing angiitis, acute gout, and pancreatitis when epigastric pain or unexplained G.I. symptoms develop after prolonged administration. Other reactions reported with this class of compounds include: jaundice, xanthopsia, paresthesia, and photosensitization.
Average Dosage: 50 or 100 mg. with breakfast daily or 100 mg. every other day.
Availability: White, single-scored tablets of 100 mg. and aqua tablets of 50 mg., in bottles of 100 and 1000.
(B)R46-230-D
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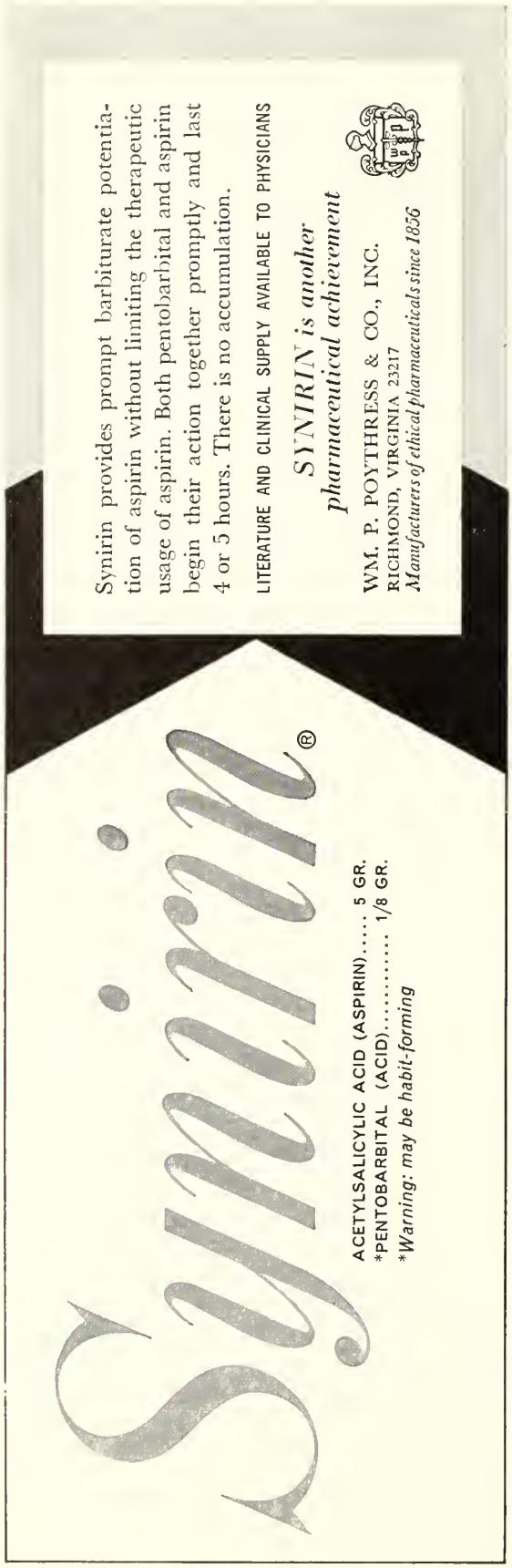
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REMEMBER . . . when covered diagnostic services are rendered, such as x-rays, EKG's etc., a regular Blue Shield claim form is to be used in reporting these services and payments will be made directly to the participating physician as is the case with all other Blue Shield services.

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that clouds vision

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Each tablet or capsule contains
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Precaution: same as 16 mg. of phenobarbital



Constructive Therapy

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DON'T BE LULLED BY RELATIVE LACK OF FLU LAST WINTER. THIS WINTER BE PREPARED: WHEN THE COMPLAINTS ARE COUGH AND CONGESTION, YOU CAN RELIEVE THESE SYMPTOMS WITH TUSSAGESIC TABLETS. ONE TIMED-RELEASE TABLET AT MORNING, MIDAFTERNOON AND BEDTIME BRINGS UP TO 24 HOURS' RELIEF FROM TROUBLESOME COUGH AND STUFFED AND RUNNY NOSE. TUSSAGESIC IS THE FAMOUS TRIAMINIC FORMULA, PLUS THREE OTHER PROVED CONSTITUENTS. MAKES PATIENTS MORE COMFORTABLE. FAST. ASK YOUR DORSEY REPRESENTATIVE FOR SUPPLY OF STARTER SAMPLES, OR IF FLU IS ALREADY EPIDEMIC, PHONE COLLECT. SEE BELOW.

each

Tussagesic®

timed-release tablet contains:

Triaminic® (phenylpropanolamine hydrochloride 25 mg., pheniramine maleate 12.5 mg., pyrilamine maleate 12.5 mg.)	50 mg.
Dextromethorphan hydrobromide	30 mg.
Terpin hydrate	180 mg.
Acetaminophen	325 mg.

Dosage: Adults—1 tablet, swallowed whole to preserve timed-release feature, in morning, midafternoon and at bedtime. Side effects: Occasional drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. Precautions: The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

DORSEY LABORATORIES
a division of The Wander Company
Lincoln, Nebraska 68501

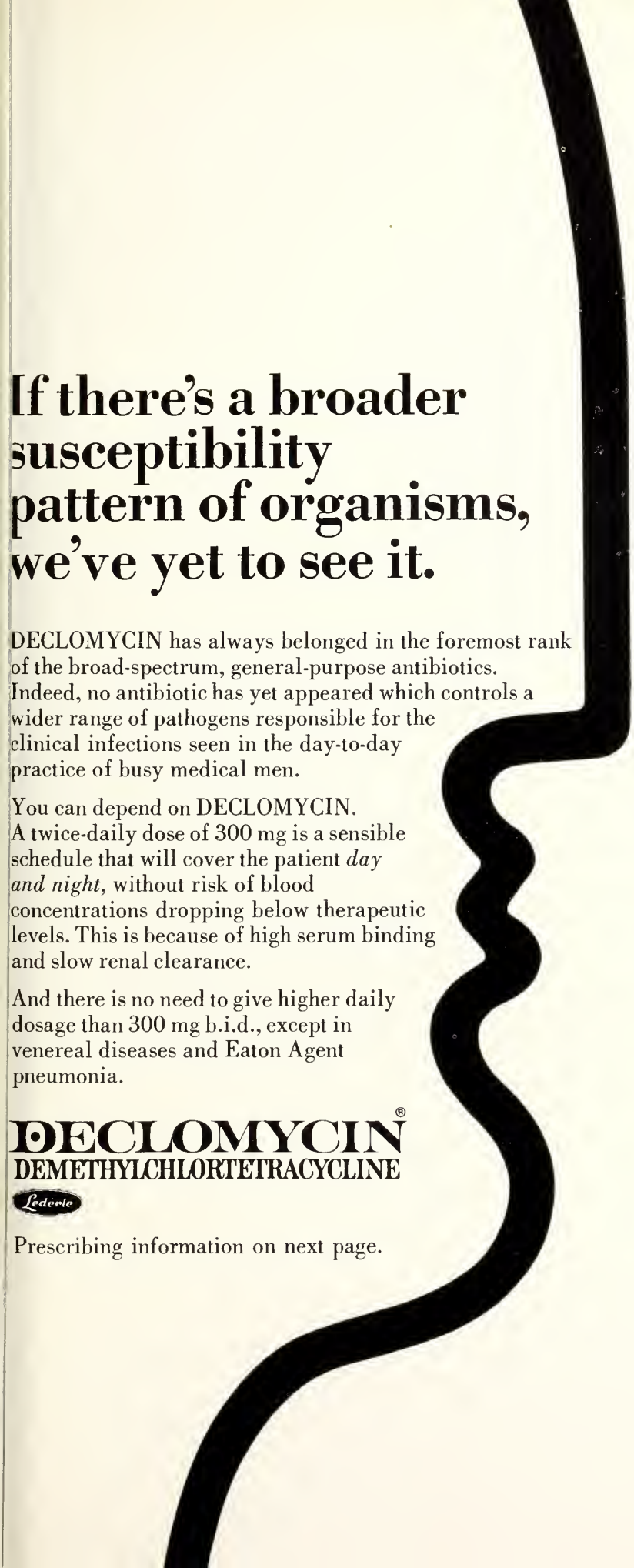
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For relief of "flu-like" symptoms
Tussagesic timed-release tablets

PHONE COLLECT

For emergency starter samples
to Keith Sehnert, M.D.
Medical Director
(402) 434-6311

Fast delivery by your Dorsey Representative



Eaton Agent

Endamoeba histolytica

Hemophilus influenzae

If there's a broader susceptibility pattern of organisms, we've yet to see it.

Pneumococcus

Escherichia coli

DECLOMYCIN has always belonged in the foremost rank of the broad-spectrum, general-purpose antibiotics. Indeed, no antibiotic has yet appeared which controls a wider range of pathogens responsible for the clinical infections seen in the day-to-day practice of busy medical men.

Gonococcus

You can depend on DECLOMYCIN. A twice-daily dose of 300 mg is a sensible schedule that will cover the patient *day and night*, without risk of blood concentrations dropping below therapeutic levels. This is because of high serum binding and slow renal clearance.

Shigella

And there is no need to give higher daily dosage than 300 mg b.i.d., except in venereal diseases and Eaton Agent pneumonia.

Staphylococcus

DECLOMYCIN®
DEMETHYLCHLORTETRACYCLINE
Lederle

Streptococcus

Prescribing information on next page.

Rickettsia

Treponema

Eaton Agent

Endamoeba histolytica

Hemophilus influenzae

Pneumococcus

Escherichia coli

Gonococcus

Shigella

Staphylococcus

Streptococcus

Rickettsia

Treponema

If there's a broader susceptibility pattern of organisms, we've yet to see it.

DECLOMYCIN Demethylchlortetracycline should be equally or more effective therapeutically than other tetracyclines when the offending organisms are tetracycline-sensitive.

Contraindication: History of hypersensitivity to demethylchlortetracycline.

Warning—In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated, and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions—Overgrowth of nonsusceptible organisms may occure. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects—Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes. A rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose related. Transient increase in urinary output, sometimes accompanied by thirst (rare). Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth— dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs discontinue medication and institute appropriate therapy.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

In the treatment of syphilis a dosage schedule of a total of 12 to 18 Gm. given in equally divided doses over a period of 10 to 15 days should be followed. Close follow-up observation of the patient is recommended, including appropriate laboratory tests, since demethylchlortetracycline has not had adequate evaluation in all stages of syphilis. Spinal ffuid examination should be included as part of this follow-up.

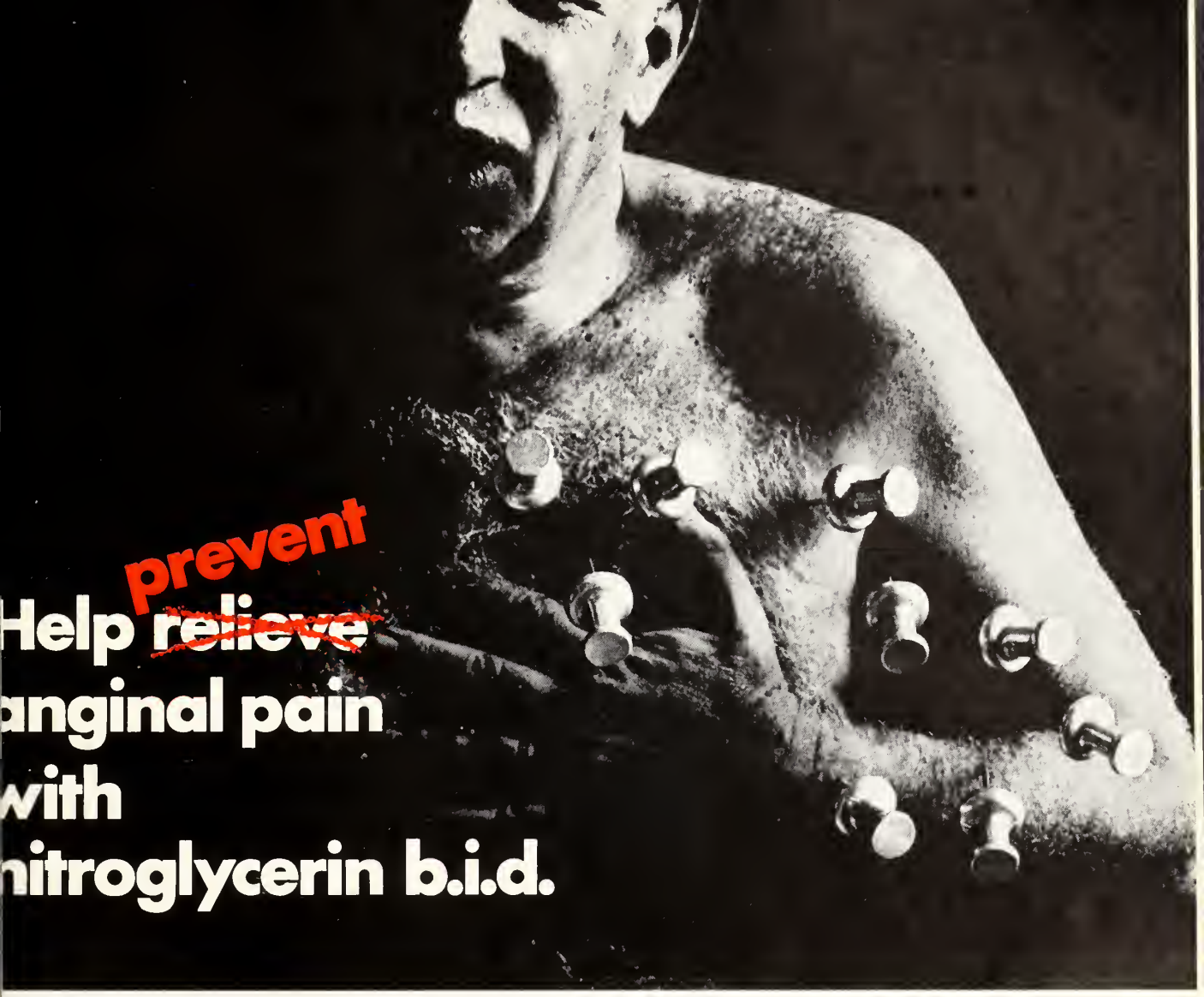
Acute gonococcal anterior urethritis in males has been treated effectively with a single dose of 600-900 mg. of DECLOMYCIN Demethylchlortetracycline. Individuals unahle to tolerate large single doses due to gastrointestinal side effects may be treated with 150 mg. every 6 hours for a minimum of 4 doses or 300 mg. every 12 hours for a minimum of 2 doses. Females should be treated with a dosage of 150 mg. every 6 hours or 300 mg. every 12 hours until a cure is affected.

Primary Atypical Pneumonia (Eaton Agent): The average adult daily dosage is 900 mg. in 3 divided doses for six days.

LEDERLE LABORATORIES, A Division of American Cyanamid Company, Pearl River, N.Y.

Lederle

486-7—5993A

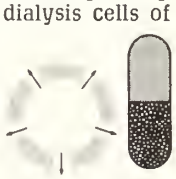


Unique Nitrospan micro-dialysis process* adds an important dimension–TIME–to nitroglycerin therapy

Helps decrease frequency and severity of attacks; often increases exercise tolerance. Decreases need for sublingual nitroglycerin, increases patient confidence. Smooth, continuous release independent of gastrointestinal functions reduces headache and other side effects that might result from peak concentrations of tablet or intermittent-release preparations.

Indication and Dosage: For prophylactic use only in angina pectoris, 1 capsule every 12 hours. **Precautions:** For prophylaxis only, not for relief of acute anginal attacks. Tolerance to nitrites may develop on long-continued use. **Contraindications:** Idiosyncrasy to nitroglycerin, and early myocardial infarction. **Side Effects:** With use of nitrites, transient headache, postural hypotension, nausea and vomiting may occur. Overdoses may cause flushing, dizziness, tachycardia, headache and syncope.

*__The micro-dialysis cell.__ Nitrospan's timed-release mechanism is different from those usually employed in sustained-action capsules, which rely on unpredictable digestive processes. The nitroglycerin in Nitrospan capsules is contained within hundreds of dialysis cells of controlled permeability. The contents of each micro-dialysis cell are released by diffusion rather than disintegration, at a continuous rate independent of gastrointestinal action. Only the presence of fluid is required.



NEW from USV **NITROSPAN®** CAPSULES

brand of **nitroglycerin** 2.5 mg. in micro-dialysis cells

For a starter supply of NITROSPAN, write: USV PHARMACEUTICAL CORPORATION, 800 Second Avenue, New York, N.Y. 10017

PRODUCERS OF DBI®-TD (phenformin HCl)



Tears without grief

Crying Spells–psychic tension with depressive symptoms?

"I don't know what's the matter with me lately...I cry and I cry... and I really don't know why I do."

A woman often is not conscious of the real reasons for her crying spells or refuses to admit them to herself. On probing, you may find that frequent weeping, like insomnia or neurotic fatigue, often is an expression of psychic tension. She needs sympathy and reassurance, and perhaps a calming agent to help her over her crisis. Consider prescribing Valium (diazepam) for her. It usually reestablishes calmness promptly. Crying spells and other secondary depressive symptoms normally subside as the tension is relieved. Your patient then can cope more easily with stresses to which she is subjected. Valium (diazepam) is generally well tolerated, and on proper mainteenance dosage usually does not impair mental acuity or ability to function. If side effects such as ataxia and drowsiness occur, they usually disappear with dosage adjustment.

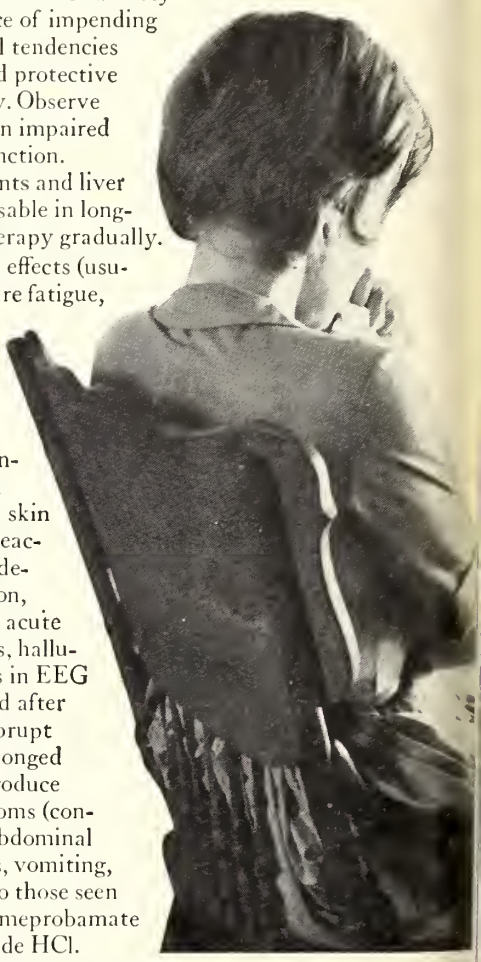


Before prescribing, please consult complete product information, a summary of which follows:

Contraindications: Infants, patients with history of convulsive disorders, glaucoma or known hypersensitivity to drug.

Warning: Not of value in the treatment of psychotic patients, and should not be employed in lieu of appropriate treatment.

Precautions: Limit dosage to smallest effective amount in elderly or debilitated patients (not more than 1 mg, one or two times daily initially) to preclude ataxia or oversedation, increasing gradually as needed or tolerated. As is true of all CNS-acting drugs, until correct maintenance dosage is established, advise patients against possibly hazardous procedures requiring complete mental alertness or physical coordination. Driving during therapy not recommended. In general, concurrent use with other psychotropic agents is not recommended. If such combination therapy is used, carefully consider individual pharmacologic effects–particularly with known compounds which may potentiate action of Valium (diazepam), such as phenothiazines, barbiturates, MAO inhibitors and other antidepressants. Advise patients against simultaneous ingestion of alcohol or other CNS depressants. Safe use in pregnancy not established. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Observe usual precautions in impaired renal or hepatic function. Periodic blood counts and liver function tests advisable in long-term use. Cease therapy gradually.

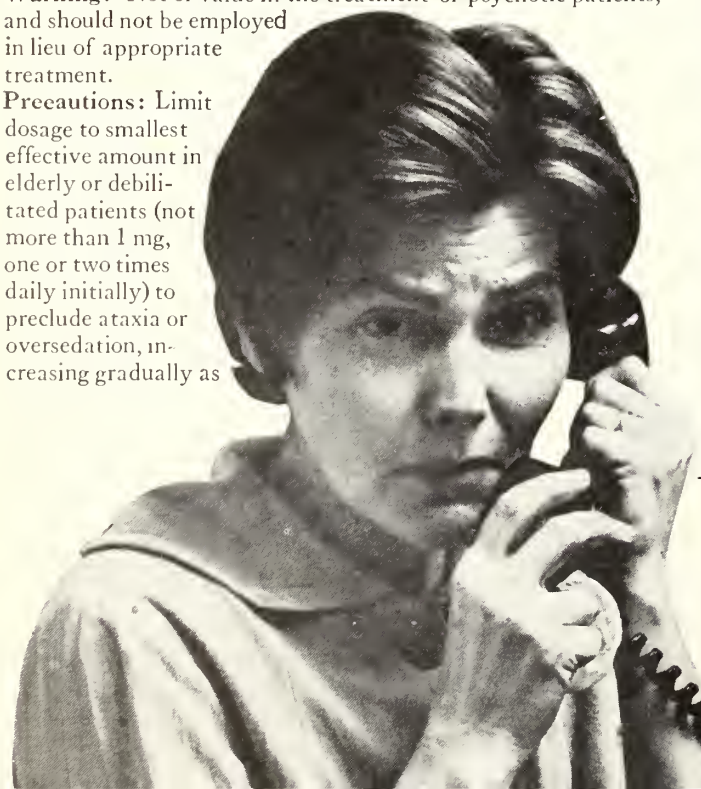


Side Effects: Side effects (usually dose-related) are fatigue, drowsiness and ataxia. Also reported: mild nausea, dizziness, blurred vision, diplopia, headache, incontinence, slurred speech, tremor and skin rash; paradoxical reactions (excitement, depression, stimulation, sleep disturbances, acute hyperexcited states, hallucinations); changes in EEG patterns during and after drug treatment. Abrupt cessation after prolonged overdosage may produce withdrawal symptoms (convulsions, tremor, abdominal and muscle cramps, vomiting, sweating) similar to those seen with barbiturates, meprobamate and chlordiazepoxide HCl.

Dosage: *Adults:* Mild to moderate psychoneurotic reactions, 2 to 5 mg b.i.d. or t.i.d.; severe psychoneurotic reactions, 5 to 10 mg t.i.d. or q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; muscle spasm with cerebral palsy or athetosis, 2 to 10 mg t.i.d. or q.i.d. *Geriatric patients:* 1 or 2 mg/day initially, increase gradually as needed and tolerated. (See Precautions.)

Supplied: Valium® (diazepam) Tablets, 2 mg, 5 mg and 10 mg; bottles of 50 and 500.

Roche Laboratories, Division of Hoffmann-La Roche Inc. Nutley, N.J. 07110



Valium® (diazepam) Roche®

useful for the relief of psychic tension with associated depressive symptoms

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Supplement to

The Journal of the Maine Medical Association

Volume 58, Number 6

June, 1967

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(Corrected to May 1, 1967)

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Earnhardt, Joseph B.	55 Strondwater St., Westbrook	04092
Eppinger, Ernst	52 Belmont St., Portland	04101
Fagone, Francis A.	312 Congress St., Portland	04101
Fakhery, Behzad	339 Webster St., Lewiston	04240
Ferguson, Franklin F.	22 Bramhall St., Portland	04102
Fife, James L.	65 Baribeau Dr., Brunswick	04011
Finks, Henry B.	73 Deering St., Portland	04101
Fish, Nicholas	235 State St., Portland	04101
Fox, Francis H.	83 West St., Portland	04102
Galen, Robert S.	6 Breckan Rd., Brunswick	04011
Geer, Charles R.	208 Vaughan St., Portland	04102
Geer, George L., Jr.	208 Vaughan St., Portland	04102
Geverhahn, George	73 Deering St., Portland	04101
Gibbons, John F.	92 Bramhall St., Portland	04102
Givertz, Bernard	131 Chadwick St., Portland	04102
Glassmire, Charles R.	37 Deering St., Portland	04101
Godsoe, John A.	7 Bramhall St., Portland	04102
Goduti, Richard J.	9 Deering St., Portland	04101
Good, Philip G.	38 Deering St., Portland	04101
Greco, Edward A.	12 Pine St., Portland	04102
Grish, Albert J.	Kings Park State Hosp., Kings Park, N. Y.	11754
Hallett, George W., Jr.	72 West St., Portland	04102
Hanley, Daniel F.	Box 250, Brunswick	04011
Hardy, Edmund W.	134 U.S. Rt. 1, Falmouth	04105
Hawkes, Richard S.	233 Vaughan St., Portland	04102
Heifetz, Ralph	173 State St., Portland	04101
Herrick, Stanley E., Jr.	Maine Medical Ctr., Portland	04102

Hiebert, Clement A.	18 Bramhall St.,	Portland	04102
Hill, Douglas R.	855 Sawyer St.,	South Portland	04106
Hinckley, Harris	331 Cottage Rd.,	South Portland	04106
Holt, C. Lawrence	27 Deering St.,	Portland	04101
Huntress, Roderick L.	988 Sawyer St.,	South Portland	04106
Ines Campomanes, Carolina R.	144 State St.,	Portland	04101
Jacobson, Payson B.	295 Brighton Ave.,	Portland	04102
Johnson, Albert C.	131 Chadwick St.,	Portland	04102
Kent, Stanley W.	42 Deering St.,	Portland	04101
Knowles, John E.	131 Chadwick St.,	Portland	04102
Knowles Robert M.	49 Deering St.,	Portland	04101
Kunkle, E. Charles	131 Chadwick St.,	Portland	04102
Lape, C. Philip	7 Bramhall St.,	Portland	04102
Lappin, John J.	171 State St.,	Portland	04101
Laughlin, K. Alexander	201 State St.,	Portland	04101
Leighton, Wilbur F.	192 State St.	Portland	04101
Leiter, Laban W.	175 Vaughan St.,	Portland	04102
Levy, Richard A.	Maine Medical Ctr.,	Portland	04102
Libby, Harold E.	702 Main St.,	Westbrook	04092
Lincoln, John R.	22 Bramhall St.,	Portland	04102
Llorente, Aldo F.	56 Baribeau Dr.,	Brunswick	04011
Lorimer, Robert V.	169 State St.,	Portland	04101
Loring, William E.	144 State St.,	Portland	04101
Love, Robert B.	97 Main St.,	Gorham	04038
Lovely, David K.	46 Deering St.,	Portland	04101
Lutes, Chris A.	7 Bramhall St.,	Portland	04102
Mack, Francis X.	144 State St.,	Portland	04101
MacVane, William L., Jr.	211 State St.,	Portland	04101
Maier, Paul	723 Congress St.,	Portland	04102
Maltby, George L.	31 Bramhall St.,	Portland	04102
Marshall, Donald F.	25 Bramhall St.,	Portland	04102
Marston, Paul C.		Kezar Falls	04047
Martin, Ralf	131 Chadwick St.,	Portland	04102
Martin, Thomas A.	157 Pine St.,	Portland	04102
Matthews, Edward C.	131 Chadwick St.,	Portland	04102
Mazzone, Giovanni	487 Stevens Ave.,	Portland	04103
McAdams, William R.	723 Congress St.,	Portland	04102
McAfee, Robert E.	18 Bramhall St.,	Portland	04102
McCann, Eugene C.	49 Deering St.,	Portland	04101
McCrum, Philip H.	188 State St.,	Portland	04101
McFarland, Edward A.	Baribeau Dr.,	Brunswick	04011
McIntire, Barron F., Jr.	13 W. Elm St.,	Yarmouth	04096
McLean, E. Allan	29 Deering St.,	Portland	04101
McManamy, Eugene P.	72 West St.,	Portland	04102
McMichael, Morton	73 Deering St.,	Portland	04101
Melkis, Andrew	Box 161,	Gray	04039
Miller, Thor	752 Main St.,	Westbrook	04092
Mohlar, Robert G.	Baribeau Dr.,	Brunswick	04011
Monaghan, Stephen E.	7 Bramhall St.,	Portland	04102
Monkhouse, William A.	131 State St.,	Portland	04101
Morrison, Alvin A.	57 Deering St.,	Portland	04101
Morrison, Robert M.	148 State St.,	Portland	04101
Moulton, Albert W., Jr.	180 State St.,	Portland	04101
Moulton, Sumner E.	233 Vaughan St.,	Portland	04102
O'Donnell, Eugene E.	32 Deering St.,	Portland	04101
Olmsted, Burton L.	73 Deering St.,	Portland	04101
Orbeton, Everett A.	131 Chadwick St.,	Portland	04102
Osher, Harold L.	131 Chadwick St.,	Portland	04102
Ottum, Alvin E.	148 State St.,	Portland	04101
Pawle, Robert H.	8 Walcott Ave.,	Falmouth	04105
Pennoyer, Douglass C.	112 Vaughan St.,	Portland	04102
Penta, Walter E.	316 Woodford St.,	Portland	04103
Perkins, Niles L.	R.F.D. No. 1,	Bowdoinham	04008
Pogue, Jackson S.	529 Gilmore Ave.,	Trafford, Pa.	15085
Poliner, Irving J.	235 State St.,	Portland	04101
Polisner, Saul R.	143 Vaughan St.,	Portland	04102
Porter, Joseph E.	22 Bramhall St.,	Portland	04102
Proudian, Paul O.	776 Main St.,	Westbrook	04092
Ray, Ferris S.	7 Bramhall St.,	Portland	04102
Rerrick, Erwin G.	Box C,	Pownal	04069
Richards, A. Dewey	11 Gage St.,	Bridgton	04009
Robinson, Hugh P.	27 Deering St.,	Portland	04101
Rogers, Albert M.	157 Pine St.,	Portland	04102
Rubins, Nina B.	E. A. Center Mem. Clinic,	Steep Falls	04085
Rubins, Talivaldis E. A.	Center Mem. Clinic,	Steep Falls	04085
Sager, George F.	18 Bramhall St.,	Portland	04102
Santoro, Domenico A.	43 Deering St.,	Portland	04101
Sapiro, Howard M.	171 State St.,	Portland	04101
Saunders, Norman W.	233 Vaughan St.,	Portland	04102
Sawyer, Howard P., Jr.	22 Bramhall St.,	Portland	04102
Selvage, Irving L., Jr.	22 Bramhall St.,	Portland	04102
Shapiro, Morrill	7 Bramhall St.,	Portland	04102
Skillin, Charles E.	690 Congress St.,	Portland	04102
Stevens, Theodore M.	118 State St.,	Portland	04101
Storer, Daniel P.	108 Fessenden St.,	Portland	04103
Strach, Toffield B. J.	3 Deering St.,	Portland	04101
Stroud, Geoffrey A.	65 Baribeau Dr.,	Brunswick	04011
Swanson, Ronald A.	Regional Mem. Hosp.,	Brunswick	04011
Sylvester, Stanley B.	400 Congress St.,	Portland	04111
Tabachnick, Henry M.	110 Park Ave.,	Portland	04101
Taxiarchis, Louis N.	144 State St.,	Portland	04101
Taylor, William F.	134 U.S. Rte. 1,	Falmouth	04105
Telfeian, Alphonse	131 Chadwick St.,	Portland	04102
Tetreau, William J.	144 Spring St.,	Portland	04101
Thompson, Philip P., Jr.	131 Chadwick St.,	Portland	04102
Toner, Cornelius A.	157 Pine St.,	Portland	04102
Tougas, Raymond A.	8 Cumberland St.,	Brunswick	04011
Turcotte, Guy N.	7 Bramhall St.,	Portland	04102
Turgeon, Raphael F.	367 Main St.,	Westbrook	04092
Turnbull, Elliott D.	Elm House,	Naples	04055
Urjanis, Janis	Box C,	Pownal	04069
Vanadzin, Boris A.	Rockland County Medical Dept.,	New City, N. Y.	10956
Van Deventer, Wilhelm H. J.	R.F.D. No. 1, Mere Point Rd.,	Brunswick	04011
Van Lonkhuyzen, Maurice	131 State St.,	Portland	04101
Ward, John V.	131 State St.,	Portland	04101
Weaver, Michael L.	36 Federal St.,	Brunswick	04011
White, Houghton M.	56 Baribeau Dr.,	Brunswick	04011
White, William J.	1 Mitchell Rd.,	South Portland	04106
Whittier, Alice A. S.	143 Neal St.,	Portland	04102
Winkelbauer, Rudolf G.	Baribeau Dr.,	Brunswick	04011
Woodman, Arthur B.	15 Johnson Rd.,	Falmouth Foreside	04105
Wyman, David S.	233 Vaughan St.,	Portland	04102
Zolov, Benjamin	296 Congress St.,	Portland	04101

HONORARY

Barker, Nathaniel B. T.	1 South St.,	Yarmouth	04096
Blaisdell, Elton R.	233 Vaughan St.,	Portland	04102
Cummings, George O., Sr.,	47 Deering St.,	Portland	04101
Fogg, C. Eugene	35 Deering St.,	Portland	04101
Melnick, Jacob	261 Congress St.,	Portland	04101
Moulton, Albert W., Sr.	180 State St.,	Portland	04101
Patterson, James	1 Bay Rd.,	South Portland	04106
Petterson, Hermon C.		Chebeague Island	04017
Ridlon, Joseph R.	58 South St.,	Gorham	04038
Sowles, Horace K.	413 Blackstrap Rd.,	Falmouth	04105
Thaxter, Langdon T.	Cumberland Foreside,	Portland	04110

SENIOR

Babalian, Leon	645 Congress St.,	Portland	04101
Blumberg, Edward	6316 Strickland Ave.,	Brooklyn, N. Y.	11234
Casey, William L.	131 State St.,	Portland	04101
Dooley, Francis M.	53 Deering St.,	Portland	04101
Freeman, William E.	107 Main St.,	Yarmouth	04096
Johnson, Oscar R.	18 Deering St.,	Portland	04101
Lombard, Reginald T.	793 Main St.,	South Portland	04106
Scolten, Adrian H.	32 Deering St.,	Portland	04101
Webber, Isaac M.	29 Deering St.,	Portland	04101
Wiglit, Donald G.	30 Mitchell Rd.,	South Portland	04106

AFFILIATE

Getchell, Ralph A.	14 Elmwood Rd.,	Cape Elizabeth	04107
Sidwell-Thompson, Doris M.	R.F.D. Whittier Rd.,	W. Ossipee, N. H.	03890
Titherington, John B.	97 Brook Rd.,	Falmouth	04105
Wellington, J. Foster	396 Brighton Ave.,	Portland	04102

JUNIOR

Allen, Donald E.		Sebago Lake	04075
Fogg, Philip S., Jr.	39 Upper Loudon Rd.,	Loudonville, N. Y.	12211
Gates, Clifford W.	30 Flaggy Meadow Rd.,	Gorham	04038
Hudson, Henry A.	R.F.D. No. 1,	West Bridgton	04009
Sirodot, George	Box 111,	Independence, Iowa	50644
Stocks, Joseph F.	18 Longfellow Ave.,	Brunswick	04011

SERVICE

Briggs, Winton 21 Swift St., Ft. Leonard Wood, Mo. 65473
Stephenson, Richard B. Bldg. 1, Rm. 118, National Institutes of Health, Bethesda, Md. 20014

FRANKLIN COUNTY

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Secretary-Treasurer—Maynard B. Colley, M.D.

ACTIVE

Bowne, Hays G. 9A Main St., Farmington 04938
Brinkman, Harry 47 Perham St., Farmington 04938
Brinkman, Paul A. Farmington 04938
Colley, Maynard B. 14 Main St., Farmington 04938
Covert, Stanley B. Kingfield 04947
Doble, Miriam Sugarloaf Mt., Kingfield 04947
Duffy, Wallace H. 100 Main St., Farmington 04938
Duran-Quevedo, Tomas A. 2012 Wrightsboro Rd., Augusta, Ga. 30904
Eastman, Charles W. 15 Millett St., Livermore Falls 04254
Fiorica, Gaetano T. 12 Church St., Chisholm 04222
Floyd, Paul E. 2 Middle St., Farmington 04938
Gashgai, Abdollah S. Livermore Falls 04254
Pope, W. Dean 6 Pleasant St., Rangeley 04970
Reed, James W. 18 Main St., Farmington 04938
Zikel, Herbert M. High St., Wilton 04294

HONORARY

Pratt, George L. 37 Lawrence St., Fairfield 04937

SENIOR

Weymouth, Currier C. Eastmont Square, Farmington 04938

JUNIOR

Marsters, David W. 51 Benson St., Glen Ridge, N. J. 07028

HANCOCK COUNTY

President—Robert D. Wilson, M.D.

Secretary-Treasurer—Russell G. Williamson, M.D.

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Bromley, William C. Medical Ctr., Southwest Harbor 04679
Brownlow, Bradley E. Blue Hill Mem. Hosp., Blue Hill 04614
Cameron, Dwight 12 Mt. Desert St., Bar Harbor 04609
Clason, Walton P. C. 50 Union St., Ellsworth 04605
Coffin, Ernest L. Northeast Harbor 04662
Cooper, Llewellyn W. 194 Main St., Bar Harbor 04609
Crowe, James H. Box 262, Richmond, Vt. 05477
Field, Richard L. Herrick Rd., Southwest Harbor 04679
Fuller, George G. 50 Union St., Ellsworth 04605
Gray, Philip L. Blue Hill 04614
Hsu, Theodore S. 14 High St., Ellsworth 04605
Joost, Arthur M., Jr., Box 520, Bucksport 04416
Knickerbocker, Charles H. 15 High St., Bar Harbor 04609
Kopfmann, Harry Deer Isle 04627
LaCasce, Joseph H. 50 Union St., Ellsworth 04605
Lambdin, Morris A. Maine Coast Mem. Hosp., Ellsworth 04605
Larrabee, Charles F. 48 Mt. Desert St., Bar Harbor 04609
McIntyre, John D. 50 Union St., Ellsworth 04605
Pease, Horace B. Maine Coast Mem. Hosp., Ellsworth 04605
Russell, Robert F. Penobscot 04476
Silver, Randall H. Maine Coast Mem. Hosp., Ellsworth 04605
Stadler, Eliot T. West Gouldsboro 04687
Stewart, Nancy H. 194 Main St., Bar Harbor 04609
Stewart, Winston G. 194 Main St., Bar Harbor 04609
Suyama, Eji 58 W. Main St., Ellsworth 04605
Tbegen, W. Edward Elm St., Bucksport 04416
Torrey, Marcus A. 75 State St., Ellsworth 04605
Wilbur, Herbert T., Jr. 100 Main St., Southwest Harbor 04679
Williamson, Elizabeth E. Blue Hill 04614
Williamson, Russell G. Blue Hill Mem. Hosp., Blue Hill 04614
Wilson, Robert D. Mt. Desert Island Hosp., Bar Harbor 04609

HONORARY

Babcock, Harold S. Castine 04421

SERVICE

York, Elihu (LCDR) MC USN
USS Essex (CVS-9), FPO, New York, N.Y. 09501

KENNEBEC COUNTY

President—Robert L. Ohler, M.D.

Secretary-Treasurer—Lucien F. Veilleux, M.D.

ACTIVE

Ashley, Alta 11 Weston St., Augusta 04330
Barnard, John M. H. Doctors Park, 89 Hospital St., Augusta 04330
Barron, Richard E. Main St., Monmouth 04259
Beckerman, Stanley C. 175 Silver St., Waterville 04901
Bhatnagar, Hemendra N. 67 Silver St., Waterville 04901
Bolduc, Jean L. 173 Main St., Waterville 04901
Bourassa, Harvey J. 47 Elm St., Waterville 04901
Brann, Henry A. 31 Weston Ave., Augusta 04330
Bull, Frank B. 5 Hasson St., Hallowell 04347
Callahan, Robert L. 12 Spruce St., Augusta 04330
Canal, Ory D. 193 Cony St., Augusta 04330
Caoili, Cesar M. Augusta State Hosp., Augusta 04330
Castellanos, Jose Augusta State Hosp., Augusta 04330
Chamberlin, Richard T. 14 Gilman St., Waterville 04901
Chasse, Richard L. 18 Park St., Waterville 04901
Chen, Jen-Ti Cherry Hill Ter., Waterville 04901
Cook, Aaron 23 High St., Waterville 04901
Crawford, Joseph R. 12 Spruce St., Augusta 04330
Cruickshank, Frank S., Jr. Eaton Dr., Waterville 04901
Dachslager, Philip 8 Green St., Augusta 04330
Darlington, Brinton T. Doctors Park, 89 Hospital St., Augusta 04330
Davis, Earle M. 2 School St., Waterville 04901
Denison, John D. 105 Brunswick Ave., Gardiner 04345
Dennis, Richard H. 33 College Ave., Waterville 04901
Dole, Richard R. 218 Main St., Waterville 04901
Dore, Clarence E. 2 School St., Waterville 04901
Dunn, Robert H. Veterans Adm., Togus 04330
Emanuel, Meyer Veterans Adm., Togus 04330
Ervin, Edmund N. 2 School St., Waterville 04901
Fisher, Dean H. State House, Augusta 04330
Fisher, Samson 15 College Ave., Waterville 04901
Galarraga, Efraim C. Augusta State Hosp., Augusta 04330
Giddings, Lane Veterans Adm. Hosp., Wilkes-Barre, Pa. 18703
Giddings, Paul D. 31 Western Ave., Augusta 04330
Giesen, Joseph H. 34 Gilman St., Waterville 04901
Gingras, Napoleon J. 6 E. Chestnut St., Augusta 04330
Goodof, Irving I. Thayer Hospital, Waterville 04901
Gould, George I. 79 Main St., Richmond 04357
Guillemette, Maurice R. 109 Water St., Augusta 04330
Guite, L. Armand, Jr. 45 Elm St., Waterville 04901
Harlow, Edwin W. 177 Main St., Waterville 04901
Hayes, James C. 6 E. Chestnut St., Augusta 04330
Hermoso, Miguel Augusta State Hosp., Augusta 04330
Hiebel, Joseph J. 34 Gilman St., Waterville 04901
Hill, Kevin 33 College Ave., Waterville 04901
Hirschberger, Celia Augusta State Hosp., Augusta 04330
Hornberger, H. Richard 2 School St., Waterville 04901
Hurd, Allan C. 5 Hasson St., Hallowell 04347
Jan, M. Rafiq 100 Church St., New York, N. Y. 10007
Jones, Paul A., Jr., 2 School St., Waterville 04901
Kawamura, Takeo 269 Water St., Augusta 04330
Lal, Chandra P. Augusta State Hosp., Augusta 04330
Landwehr, George R. 21 Western Ave., Augusta 04330
Lansing, Peter F. 16 Macomber Ave., Augusta 04330
Lepore, Anthony E. 128 Maine Ave., Gardiner 04345

Lopez, Eduardo A.	33 College Ave., Waterville	04901
Marshall, Joseph A.	177 Main St., Waterville	04901
Marshall, Paul A.	R.F.D. No. 1, Box 121A, Ridge Rd., Fairfield	04937
Mathews, Hugh J., Jr.	345 Water St., Gardiner	04345
McLaughlin, Clarence R.	345 Water St., Gardiner	04345
McLaughlin, Ivan E.	345 Water St., Gardiner	04345
Melendy, Oakley A.	Doctors Park, 89 Hospital St., Augusta	04330
Michaud, Joseph C.	160 Silver St., Waterville	04901
Milliken, Howard H.	R No. 1, Pond Rd., (Manchester), Hallowell	04347
Monsivais, Alfredo	1 Western Ave., Winthrop	04364
Moore, Valentine J.	Thayer Hospital, Waterville	04901
Morris, Craig W.	50 Bangor St., Augusta	04330
Nikolaidis, Demitrios	22 Ridgewood Dr., Augusta	04330
O'Connor, Francis J.	4 Woodlawn St., Augusta	04330
Ohler, Robert L.	Veterans Adm., Togus	04330
Patterson, John C.	Augusta State Hosp., Augusta	04330
Peddie, Harry M. K.	Doctors Park, 89 Hospital St., Augusta	04330
Pfeiffer, Paul H.	14 Gilman St., Waterville	04901
Plimpton, Jay R.	283 Water St., Augusta	04330
Polydefkis, Dimitri G.	Augusta State Hosp., Augusta	04330
Pomerleau, Ovid F.	179 Main St., Waterville	04901
Pomerleau, Rodolphe J. F	27 Main St., Waterville	04901
Poulin, Albert A.	Cherry Hill Dr., Waterville	04901
Poulin, James E.	177 Main St., Waterville	04901
Pratt, Loring W.	177 Main St., Waterville	04901
Provost, Helen C.	48 Green St., Augusta	04330
Provost, Pierre E.	48 Green St., Augusta	04330
Reynolds, John F.	216 Main St., Waterville	04901
Richards, Lee W., Jr.	21 Western Ave., Augusta	04330
Robertson, George J.	171 Harrison Ave., Boston, Mass.	02111
Rodriguez, Jose M.	109 Silver St., Waterville	04901
Rohm, Walter	Augusta State Hosp., Augusta	04330
Runyon, William N.	Veterans Adm., Togus	04330
Russell, Theodore M.	20 Western Ave., Augusta	04330
Satir, Ahmet	Box 682, Augusta	04330
Saunders, Allen I.	Ferry Rd., R.F.D. 2, Augusta	04330
Schmidt, Lorrimer M.	Veterans Adm., Togus	04330
Schumacher, William E.	14 Westwood Rd., MD "B", Augusta	04330
Schwartz, Harold J.	Seton Hospital, Waterville	04901
Seligman, Morris J.	Veterans Adm., Togus	04330
Senenky, Joseph P.	Augusta State Hosp., Augusta	04330
Sewall, Kenneth W.	2 School St., Waterville	04901
Shaw, John H.	131 Sewall St., Augusta	04330
Shelton, M. Tieche	21 Western Ave., Augusta	04330
Simpson, Margaret R.	2 Sea Barn Rd., Cape Elizabeth	04107
Smith, Kenneth E.	Veterans Adm., Togus	04330
Sommerfeld, Kurt A.	Veterans Adm., Togus	04330
Spellman, Francis A.	Veterans Adm., Togus	04330
Stinchfield, Allan J.	Box 343, Augusta	04330
Stueki, Paul	72 Elm St., Waterville	04901
Sturtevant, Vaughn R.	33 College Ave., Waterville	04901
Towne, Charles E.	18 Common St., Waterville	04901
Trembly, Bruce	33 College Ave., Waterville	04901
Veilleux Lucien F.	30 Elm St., Waterville	04901
Willard, Harold N.	Thayer Hospital, Waterville	04901
Wilson, Robert W.	Veterans Adm., Togus	04330

HONORARY

Crawford, Albert S.	1960 Graefield Rd., Birmingham, Mich.	48008
Crawford, J. Ramser	12 Spruce St., Augusta	04330
Hill, Frederick T.	Thayer Hospital, Waterville	04901
Kagan, Samuel H.	283 Water St., Augusta	04330
Reynolds, Ralph L.	216 Main St., Waterville	04901

SENIOR

Bauman, Clair S.	159 Silver St., Waterville	04901
Goodrich, Blynn O.	165 Main St., Waterville	04901
Herring, Leon D.	Memorial Dr., Winthrop	04364
Hill, Howard F.	33 College Ave., Waterville	04901
Langer, Ella	2 Chapel St., Augusta	04330
Marquardt, Matthias	109 Cony St., Augusta	04330
McQuillan, Arthur H.	177 Main St., Waterville	04901

AFFILIATE

Guite, L. Armand, Sr.	45 Elm St., Waterville	04901
McLarn, William D.	222 Main St., Waterville	04901
Reel, John J.	59 So. Front St., Richmond	04357
Sanders, Stephen W.	120 Main St., Winthrop	04364
Sleeper, Francis H.	3 Colony Rd., Augusta	04330

JUNIOR

Dillihunt, Richard C.	Maine Medical Ctr., Portland	04102

KNOX COUNTY

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Secretary-Treasurer—William W. Ward, M.D.

ACTIVE

Alexander, Fay K.	Camden Com. Hosp., Camden	04843
Apollonio, Howard L.	22 White St., Rockland	04841
Brouwer, Johan	5 Beech St., Rockland	04841
Dennison, Frederick C.	3 Gillchrest St., Thomaston	04861
Earle, Ralph P.	Vinalhaven	04863
Eddy, Robert H.	5 Beech St., Rockland	04841
Fuller, Barbara L.	20 Chestnut St., Rockland	04841
Hardy, Henri	Dark Harbor, Islesboro	04848
Hawkins, Donald B.	Atlantic Ave. & Sea St., Camden	04843
Holz, Peter H.	51 Elm St., Camden	04843
Howard, Emery B., Jr.,	23A Summer St., Rockland	04841
Hunter, Albert L.	Camden Com. Hosp., Camden	04843
Jones, Paul A., Sr.	385 E. State St., Westport, Conn.	06880
Kangas, Onni C.	417 Main St., Rockland	04841
Kibbe, Frank W.	R.F.D., Lincolnville	04849
Kim, Hakkew	33 Main St., Thomaston	04861
King, Merrill J., Jr.	22 White St., Rockland	04841
Lathbury, Vincent T.	Medical Arts Building, Rockland	04841
Lawry, Oram R., Jr.	96 Limerock St., Rockland	04841
McLellan, William A.	87 Chestnut St., Camden	04843
Millington, Paul A.	44 Mountain St., Camden	04843
Morse, Edward K.	22 White St., Rockland	04841
Onat, Mustafa V.	St. George	04857
Root, John A.	22 White St., Rockland	04841
Tounge, Harry G., Jr.	12 Union St., Camden	04843
Ward, William W.	Box 804, Rockland	04841
Wasgatt, Wesley N.	41 Talbot Ave., Rockland	04841
Waterman, Richard	Main St., Waldoboro	04572
White, Henry O.	22 White St., Rockland	04841
Williams, Thomas W.	22 White St., Rockland	04841
Worthing, Verla E.	Box A, Thomaston	04861

HONORARY

Campbell, Fred G.	Box 184, Warren	04864
Frost, Harold M.	Friendship	04547

SENIOR

Jameson, C. Harold	Medical Arts Building, Rockland	04841
Loewenstein, George	(Address Unknown)	
Naumer, Harry A.	Land's End, Port Clyde	04855
Platt, Anna	Beauchamp Rd., Rockport	04856
Saunders, Sallie H.	R.F.D., Camden	04843

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Bean, Achsa M.	Star Route 22-282, Owl's Head	04854
Stimson, Barbara B.	Star Route 22-282, Owl's Head	04854

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Abdalla, Abdalla Y.	Address Unknown	
Akar, Hamdi	17 Grove St., Bath	04530
Andrews, John F.	20 West St., Boothbay Harbor	04538

Belknap, Samuel L.	Damariscotta	04543
Blackburn, Nelson P.	Bath Memorial Hosp., Bath	04530
Bostwick, George W.	Box 388, Newcastle	04553
Burden, Charles E.	1 North St., Bath	04530
Dorogi, Louis V.	Old Post Rd., Rt. 138, Bowdoinham	04008
Dougherty, John F.	112 Front St., Bath	04530
Fichtner, Paul A.	781 High St., Bath	04530
Gregory, Philip O.	St. Andrews Hosp., Boothbay Harbor	04538
Griffin, Carl R., Jr.	69 Townsend Ave., Boothbay Harbor	04538
Kinder, Edward L., Jr.	1027 Washington St., Bath	04530
McLaren, John J.	21 Western Ave., Augusta	04330
Oceretko, Arkadij	37 Court St., Bath	04530
Powell, Ralph C.	Damariscotta	04543
Proctor, Thomas E.	Boothbay Harbor	04538
Smith, Jacob	118 Front St., Bath	04530
Smith, Joseph I.	118 Front St., Bath	04530
Stetkevych, Alexander G.	12 Meyers Crt. Colonie, Albany, N. Y.	12200
Tracy, Mary J.	Bristol Rd., Damariscotta	04543
Wilson, Harry M.	944 Middle St., Bath	04530
Winchenbach, Francis A.	910 Washington St., Bath	04530
Zeller, Alan W.	Main St., Newcastle	04553

HONORARY

Dalrymple, Sidney C.	So. Great Rd., So. Lincoln, Mass.	01751
Kershner, Warren E.	57 Green St., Bath	04530
Morin, Harry F.	905 Middle St., Bath	04530
Stetson, Rufus E.	Damariscotta	04543

SENIOR

Sherman, Fuller G.	Spruce Pt., Boothbay Harbor	04538

AFFILIATE

Bachulus, John M.	3 Breckan Rd., Brunswick	04011
Hamilton, Virginia C.	South Harpswell	04079

JUNIOR

Conner, William W.	61 Atlantic Ave., Boothbay Harbor	04538

OXFORD COUNTY

President—Harvey L. Harper, M.D.

Secretary-Treasurer Walter G. Dixon, M.D.

ACTIVE

Akerberg, Ake	2 East Main St., So. Paris	04281
Aucoin, Peter B.	151 Franklin St., Rumford	04276
Bean, H. Richard	241 Main St., Norway	04268
Conway, Kevin	Rumford Com. Hosp., Rumford	04276
Dixon, Walter G.	16 Deering St., Norway	04268
Elsemore, Dexter E.	11 Main St., Dixfield	04224
Halladjian, Hagop	Rumford Com. Hosp., Rumford	04276
Handanos, Vassilios	Cor. Lincoln Ave. and Franklin St., Rumford	04276
Harper, Harry L.	17 Main St., So. Paris	04281
Hazelton, Warren C.	2 E. Main St., So. Paris	04281
Hiebert, Joelle, C., Jr.	Box 148, Norway	04268
Martin, Joseph E.	35 Main St., Mexico	04257
Moore, Beryl M.	High St., Oxford	04270
Nangle, Thomas P.	West Paris	04289
Oestrich, Alfred	25 Hartford St., Rumford	04276
Pena, Manuel G.	82 Maine Ave., Rumford	04276
Phillips, David L.	Box 518, Rumford	04276
Rowe, Linwood M.	Rumford Com. Hosp., Rumford	04276
Royal, Albert P., Jr.	82 Maine Ave., Rumford	04276
Young, John	Paradise St., Bethel	04217

HONORARY

Adams, Lester	9 Knox St., Thomaston	04861
Mills, Nathaniel	North Main St., Wolfboro, N.H.	03894

SENIOR

Howard, Henry M.	105 Franklin St., Rumford	04296
Hubbard, Roswell E.	Waterford	04088
Kay, Edwin	31 Frye St., Lewiston	04240
MacDougall, James A.	303 Penobscot St., Rumford	04276
Nelson, Chesley W.	121 Main St., Norway	04268

JUNIOR

Jackson, Norman M.	Maine Medical Ctr., Portland	04102
Smith, Charles M.	42 Garrison Rd., Wellesley, Mass.	02181

SERVICE

Boynton, Willard H.	U.S. A.I.D., A.P.O. 271, New York, N.Y.	09271

PENOBSCOT COUNTY

President—Jay K. Osler, M.D.

Secretary—Charles D. McEvoy, Jr., M.D.

Treasurer—Thornton W. Merriam, Jr., M.D.

ACTIVE

Adams, Asa C.	68 Main St., Orono	04473
Adams, Winford C.	2906 Westover Dr., Danville, Va.	24541
Amorin, Jose V., Jr.,	297 Center St., Bangor	04401
Babcock, Edward B.	431 State St., Bangor	04401
Barrett, Robert J., Jr.	Cor. Union & James Sts., Bangor	04401
Bjorn, John C.	Hampden Highlands	04445
Blackwell, William M.	Millinocket Com. Hosp., Millinocket	04462
Blaisdell, Carl E.	47 Broadway, Bangor	04401
Blaisdell, William B., Jr.	47 Broadway, Bangor	04401
Blinder, Philip	336 Mt. Hope Ave., Bangor	04401
Bridges, Donald E.	336 Mt. Hope Ave., Bangor	04401
Brito, Joseph S.	255 Hammond St., Bangor	04401
Brown, Eugene E.	57 Summit Ave., Bangor	04401
Brown, Lloyd	186 State St., Bangor	04401
Burke, John E.	5 High St., Newport	04953
Burke, Paul W.	5 High St., Newport	04953
Butler, Harry	77 Broadway, Bangor	04401
Butterfield, Wilfred I.	119 Main St., Lincoln	04457
Chase, George O.	Eastern Maine Gen. Hosp., Bangor	04401
Chason, Sidney	128 Broadway, Bangor	04401
Clement, James D., Jr.	77 Essex St., Bangor	04401
Clough, Dexter J., 2nd	224 State St., Bangor	04401
Cornell, Robert C.	336 Mt. Hope Ave., Bangor	04401
Coulton, Donald	326 State St., Bangor	04401
Cross Harold D.	Main Rd. & Summer St., Hampden Highlands	04445
Curran, Edward L.	209 State St., Bangor	04401
Cutler, Lawrence M.	31 Grove St., Bangor	04401
Desjardins, Richard F.	240 Penobscot Ave., Millinocket	04462
Dietrich, Mary M.	Box 93, Orrington	04474
Duffey, Richard V.	187 N. Main St., Brewer	04412
Dwyer, Clement S.	205 French St., Bangor	04401
Emery, Frederick C.	242 Cedar St., Bangor	04401
Eyerer, Rudolf E.	489 State St., Bangor	04401
Feeley, J. Robert	438 Garland St., Bangor	04401
Fergus, Andrew	336 Mt. Hope Ave., Bangor	04401
Gaillard, Richard A.	276 State St., Bangor	04401
Gilman, Herbert C.	240 Penobscot Ave., Millinocket	04462
Graves, Robert A.	Sunset Drive, Orono	04473
Hall, Walter L. II.	130 Middle St., Old Town	04468
Hamlin, Irving E	Main St., E. Millinocket	04430
Hill, Allison K	431 State St., Bangor	04401
Houlihan, John S	209 State St., Bangor	04401
Hughes, Edward J., Jr.	336 Mt. Hope Ave., Bangor	04401
Hutchins, Dean L.	U.S. A.I.D., c/o American Consulate, Kaduma, Nigeria	
Irwin, Carl W.	262 State St., Bangor	04401
Kadi, Francis J.	Bangor State Hosp., Bangor	04401
Kellogg, Robert O.	431 State St., Bangor	04401
Lane, Russell M.	3 Cedarwood St., Orono	04473

Macdonald, Donald F.	83 Essex St., Bangor	04401
Madaras, John	Bangor State Hosp., Bangor	04401
Manter, Wilbur B.	1 Fern St., Bangor	04401
Mason, Peter H.	Millinocket Com. Hosp., Millinocket	04462
McEvoy, Charles D., Jr.	186 State St., Bangor	04401
McGinn, John F.	205 French St., Bangor	04401
McLean, Preston A.	336 Mt. Hope Ave., Bangor	04401
McQuoid, Robert M.	39 Columbia St., Bangor	04401
Memmelaar, Joseph E.	431 State St., Bangor	04401
Merriam, Thornton W., Jr.	431 State St., Bangor	04401
Metcalf, Cecil J.	175 Parkway North, Brewer	04412
Miraglinolo, Leonard G.	10 Maple St., Bangor	04401
Moulton, Gardner N.	5 Grove St., Bangor	04401
Munce, Richard T.	262 State St., Bangor	04401
Nesin, Bourcard	10 Water St., Howland	04448
Netland, Anders T.	431 State St., Bangor	04401
O'Kane, Francis R.	122 Penobscot Ave., Millinocket	04462
Osler, Jay K.	74 Birch St., Bangor	04401
Palmer, Thomas H., Jr.	431 State St., Bangor	04401
Parrot, Hadley	431 State St., Bangor	04401
Pearson, John J.	100 S. Main St., Old Town	04468
Pooler, Harold A.	Bangor State Hosp., Bangor	04401
Porter, Edward C.	489 State St., Bangor	04401
Purinton, William A.	276 State St., Bangor	04401
Ridlon, Magnus F.	431 State St., Bangor	04401
Ruhlin, Carl W.	336 Mt. Hope Ave., Bangor	04401
Samuelsen, Thomas W.	194 Main St., Lincoln	04457
Sensenig, David M.	431 State St., Bangor	04401
Sewall, Elmer M.	14 Park St., Orono	04473
Shapero, Benjamin L.	431 State St., Bangor	04401
Shubert, Alice J.	317 State St., Bangor	04401
Shubert, William M.	317 State St., Bangor	04401
Shurman, Hans	10 Spring St., Dexter	04930
Smith, Hugh A.	Eastern Maine Gen. Hosp., Bangor	04401
Striar, Ronald R.	94 Essex St., Bangor	04401
Strout, Warren G.	205 French St., Bangor	04401
Sullivan, John R.	340 No. Main St., Brewer	04412
Taylor, H. Lewis	25 Church St., Dexter	04930
Thomas, Philip B.	205 French St., Bangor	04401
Trowbridge, Mason, Jr.	142 Pine St., Bangor	04401
Tyson, Dudley B.	91 Grove St., Bangor	04401
Vickers, Martyn A.	268 State St., Bangor	04401
Vydas, Joseph	Bangor State Hosp., Bangor	04401
Wadsworth, Richard C.	489 State St., Bangor	04401
Wagner, Samuel L.	2 Holmes St., Winterport	04496
Walker, George R.	336 Mt. Hope Ave., Bangor	04401
Weisz, Hans	17 Sunrise Ter., Orono	04473
Whitney, Byron V.	230 State St., Bangor	04401
Whitworth, John E.	336 Mt. Hope Ave., Bangor	04401
Wood, George W., III	156 No. Main St., Brewer	04412
Woodcock, John A.	35 Second St., Bangor	04401

HONORARY

Craig, Allan	905 Egan Ave., Pacific Grove, Calif.	93950
Devan, Thomas A.	325-19th Ave., N.E., St. Petersburg, Fla.	33704
Hedin, Carl J.	Penobscot Ter., Brewer	04412
Higgins, George I.	15 Water St., Newport	04953
Weatherbee, George B.	Main St., Hampden Highlands	04445
Woodcock, Allan	35 Second St., Bangor	04401

SENIOR

Ames, Forrest B.	13 Longmeadow Dr., Brewer	04412
Dunham, Rand A.	Box 400, East Millinocket	04430
Emerson, W. Merritt	131 State St., Bangor	04401
Leddy, Percy A.	Main St., Seal Harbor	04675
McNamara, Wesley C.	8 Lee St., Lincoln	04457
Merrill, Urban H.	Etna	04434

SERVICE

Clough, Herbert T. (Col.) MC USAF, 1086 Medical Service Sqdn., Randolph AFB, Texas		78148

AFFILIATE

Holzwarth, Hans A.	155 Retreat Ave., Hartford, Conn.	06115

PISCATAQUIS COUNTY

President—Felix M. Garcia-Rey, M.D.

Secretary-Treasurer—Isaac Nelson, M.D.

ACTIVE

Bouton, Dale C.	Dexter	04930
Bradbury, Francis W.	16 E. Main St., Dover-Foxcroft	04426
Curtis, John B.	10 High St., Milo	04463
Garcia-Rey, Felix M.	14 Charles St., Milo	04463
Howard, George C.	Oak St., Guilford	04443
Lightbody, Charles H.	No. Main St., Guilford	04443
Nelson, Isaac	Box 336, Greenville	04441
Nielsen, Odd S.	120 Hudson Rd., Bangor	04401
Rodriguez, Araminta M.	14 Charles St., Milo	04463
Stitham, Linus J.	50 Main St., Dover-Foxcroft	04426

HONORARY

Bundy, Harvey C.	Milo	04463
MacDougal, Wilbur E.	186 Nowell Rd., Bangor	04401
Winter Add.—Box 533, Bay Rd., Bonita Springs, Fla.		33923
Pritham, Fred J.	Greenville Jct.	04442

SENIOR

Carde, Albert M.	33 Elm St., Milo	04463
Nickerson, Norman H.	Greenville	04441
Stanhope, Charles N.	South St., Dover-Foxcroft	04426

JUNIOR

Johnson, James H., Jr.	Pine St., Centerville, Mass.	02632

AFFILIATE

Metcalf, John T.	47 Elm St., Milo	04463

SOMERSET COUNTY

President—Marian L. Strickland, M.D.

Secretary-Treasurer—John P. Dow, M.D.

ACTIVE

Amrein, H. Carl	29 Weston Ave., Madison	04950
Ball, Franklin P.	Bingham	04920
Briggs, Paul R.	Hartland	04943
Dow, John P.	59 Main St., Pittsfield	04967
Greenlaw, William A.	129 Main St., Fairfield	04937
Grow, William B.	Central Maine San., Fairfield	04937
Hoch, Gretl J.	Phillips	04966
Hornstein, Louis S.	220 Water St., Skowhegan	04976
Jordan, W. Edward, Jr.	Box 218, Skowhegan	04976
Kemezys, Kestutis M.	25 Garfield St., Madison	04950
Laney, Richard P.	50 Water St., Skowhegan	04976
McIntire, Percy C.	Central Maine San., Fairfield	04937
Reed, Howard L.	68 Water St., Skowhegan	04976
Smith, Edgar J.	1 Park St., Fairfield	04937
Strickland, Marian L.	Easy St., Canaan	04924
Sullivan, George E.	R.F.D. No. 1, Fairfield	04937
Swett, Carlton E.	218 Water St., Skowhegan	04976
Sy, Vincente L.	Milford Ave., Bingham	04920
Szelenyi, Ernest	Central Maine San., Fairfield	04937
Szendey, Andrew M.	26 Gray St., Madison	04950
Turner, Harland G.	Box 38, Norridgewock	04957
Zbyszycki, Tadeo	39 High St., Skowhegan	04976

HONORARY

Lord, Maurice E.	Box 537, Lake Placid, Fla.	33852
Marston, Henry E.	No. Anson	04958
Webber, Merlon A.	33 Lancey St., Pittsfield	04967

SENIOR

Philbrick, Maurice S.	3349 32nd St., Ct., N. W., Ft. Lauderdale, Fla.	33309
Southworth, John D.	Hartland	04943

WALDO COUNTY

President—John R. Webber, M.D.

Secretary-Treasurer—Seth H. Read, M.D.

ACTIVE

Caswell, John A.	16 Waldo Ave., Belfast	04915
Cobb, Norman E.	132 Main St., Belfast	04915
Read, Seth H.	15 Church St., Belfast	04915
Stein, Ernest W.	72 Main St., Pittsfield	04967
Temple, George L.	Fahey St., Belfast	04915
Torrey, Raymond L.	Main St., Searsport	04974
Webber, John R.	6 Northport Ave., Belfast	04915

HONORARY

Small, Foster C.	169 High St., Belfast	04915
Stevens, Carl H.	18 Franklin St., Belfast	04915

JUNIOR

Albro, Ward A.	17 High St., Yarmouth	04096

WASHINGTON COUNTY

President—Robert G. MacBride, M.D.

Secretary-Treasurer—Karl V. Larson, M.D.

ACTIVE

Bates, James C.	Eastport	04631
Brownrigg, Leslie W.	St. Stephen, N. B.	
French, Rowland B.	16 Water St., Eastport	04631
Jacob, Donald R.	Princeton	04668
Kazutow, John	Box 113, Columbia Falls	04623
Kiel, Joseph B.	711 Eulalia Dr., Terrell, Texas	75160
Larson, Karl V.	E. Machias	04630
MacBride, Robert G.	25 Washington St., Lubec	04652
McAllister, John W.	17 Elm St., Machias	04654
Mitchell, Hazen C.	Calais	04619
Mundie, Perley J.	32 North St., Calais	04619
Nackley, George N.	1 School St., Machias	04654
Sears, Harold G.	Second Ave., Woodland	04694

HONORARY

Bennet, DaCosta F.	4 Main St., Lubec	04652

SERVICE

Gundersen, Peter M. (Capt.)
12 USAF Hosp., PACAF, APO, San Francisco, Calif. 96326

YORK COUNTY

President—Eugene P. Wolfahrt, M.D.

Secretary-Treasurer—Charles W. Kinghorn, M.D.

ACTIVE

Anton, Thomas	260 Main St., Biddeford	04005
Bacon, Melvin	122 Main St., Sanford	04073
Belmont, Ralph S.	6 Washington St., Sanford	04073
Binette, Germain A.	331 Main St., Saco	04072
Charest, Leandre R.	314 Alfred St., Biddeford	04005
Cuneo, Kenneth J.	31 Summer St., Kennebunk	04043
Dionne, William E.	75 Main St., Springvale	04083
Dorfman, Irvin	Webber Hosp., Biddeford	04005
Downing, J. Robert	35 Summer St., Kennebunk	04043
Drummond, S. Dunton	Bar Mills	04004
Eisberg, Harry B.	331 Main St., Saco	04072
Endicott, Ruth E.	Grasshopper Lane, Ogunquit	03907
Ficker, Robert F.	Maine St., Kennebunkport	04046
Fortier, Andre P.	68 Foss St., Biddeford	04005
Haas, Carl M.	357 Elm St., Biddeford	04005
Hazzard, Lawrence R.	Cider Hill Rd., York	03909
Hill, Paul S., Jr.	323 Main St., Saco	04072
Hoffman, Alvin A.	Box 38, York	03909
Hopkins, Herbert J.	24 Portland Ave., Old Orchard Beach	04064
Houle, Marcel P.	200 Alfred St., Biddeford	04005
Kothari, Nauttam J.	120 East 36th St., New York, N.Y.	10016
LaFond, Robert S.	258 Main St., Saco	04072
Laltoo, Joseph M.	6 Long Sands Rd., York	03909
Lapirow, Harry	99 Main St., Kennebunk	04043
Leigh, Kenneth E.	Brixham Rd., York	03909
Lesieur, Louis C.	255 Beach St., Saco	04072
Lincourt, Armand S.	122 Main St., Sanford	04073
Lord, George A.	34 Winter St., Sanford	04073
Lorentz, John J.	Maine Medical Ctr., Portland	04102
Magaudda, Michael M. P.	39 Old Orchard St., Old Orchard Beach	04064
Magocsi, Alexander W.	York	03909
Moulton, Marion K.	W. Newfield	04095
Murphy, John J.	84 Portland St., So. Berwick	03908
Myer, John C.	Nasson College, Springvale	04083
Nieuwkerk, Willem F.	Box 424, Kennebunkport	04046
O'Sullivan, William B.	331 Main St., Saco	04072
Ouellette, Marcel D.	120 Main St., Sanford	04073
Patane, Joseph M.	256 Alfred St., Biddeford	04005
Perrault, Oscar W.	30 South St., Biddeford	04005
Peterlein, Walter R., Jr.	75 Main St., Springvale	04083
Rhee, Woon B. Station A,	Harlem Valley State Hosp., Wingdale, N. Y.	12594
Richards, Carl E.	34 Winter St., Sanford	04073
Robert, Roger J. P.	331 Main St., Saco	04072
Ross, Maurice	372 Main St., Saco	04072
Roussin, William T.	48 Bacon St., Biddeford	04005
Shaw, G. Patrick	357 Elm St., Biddeford	04005
Smith, Gerald R.	Ogunquit	03907
Smith, Oney P.	Post Rd., Wells	04090
Taylor, Paul E.	9 Wentworth St., Kittery	03904
Turville, Charles S.	Box 187, Alfred	04002
Vachon, Robert D.	34 Winter St., Sanford	04073
Viger, Leopold A.	10 Amherst St., Biddeford	04005
Wolfahrt, Eugene P.	258 Main St., Saco	04072
Whitney, Philip G.	10 Amherst St., Biddeford	04005
Yeon, Hyung J. Station A,	Harlem Valley State Hosp., Wingdale, N. Y.	12594

HONORARY

Bunker, Willard H.	York Harbor	03911
Cobb, Stephen A.	34 Winter St., Sanford	04073
Davis, Ansel S.	Springvale	04083
Dennett, Carl G.	258 Main St., Saco	04072
Kinghorn, Charles W.	4 Wentworth St., Kittery	03904
Larochelle, Joseph R.	42 Bacon St., Biddeford	04005
Ross, H. Danforth	34 Winter St., Sanford	04073
Stevens, Harold W.	369 Ferry Rd., Saco	04072
Whitney, Ray L.	Cape Porpoise	04014

JUNIOR

Berger, Steven	Station B, Poughkeepsie, N.Y.	12602

SERVICE

Jellerson, Leon R.	1726 M St., N.W., Washington, D.C.	20211

An Alphabetical List of the Members of the Maine Medical Association

The figures in parentheses refer to County Societies as follows: (1) Androscoggin, (2) Aroostook, (3) Cumberland, (4) Franklin, (5) Hancock, (6) Kennebec, (7) Knox, (8) Lincoln-Sagadahoc, (9) Oxford, (10) Penobscot, (11) Piscataquis, (12) Somerset, (13) Waldo, (14) Washington, (15) York.

bdalla, Abdalla Y., Address Unknown (8)
dams, Asa C., 68 Main St., Orono 04473 (10)
dams, Lester, 9 Knox St., Thomaston 04861 (9)
dams, Marvin C., 25 Bramhall St., Portland 04102 (3)
dams, Winford C., 2906 Westover Dr., Danville, Va. 24541 (10)
gan, Robert W., 144 State St., Portland 04101 (3)
xar, Hamdi, 17 Grove St., Bath 04530 (8)
xerberg, Ake, 2 East Main St., South Paris 04281 (9)
bert, Joseph L., 4 Pleasant St., Fort Kent 04743 (2)
bert, Rodrigue, J., 69 W. Main St., Fort Kent 04743 (2)
bro, Ward A., 17 High St., Yarmouth 04096 (13)
exander, Fay K., Camden Com. Hosp., Camden 04843 (7)
len, Donald E., Sebago Lake 04075 (3)
nes, Forrest B., 13 Longmeadow Dr., Brewer 04412 (10)
nfilo, Basil, 626 Main St., Lewiston 04240 (1)
norin, Jose V., Jr., 297 Center St., Bangor 04401 (10)
nrein, H. Carl, 29 Weston Ave., Madison 04950 (12)
nalis, Harry, 3 Forest Pk., Portland 04101 (3)
nderson, Donald L., 369 Main St., Lewiston 04240 (1)
nderson, Dorothy, 369 Main St., Lewiston 04240(1)
ndrews, Anneliese M., Maine Medical Ctr., Portland 04102 (3)
ndrews, John F., 20 West St., Boothbay Harbor 04538 (8)
nsell, Harvey B., 39 Deering St., Portland 04101 (3)
nton, Thomas, 260 Main St., Biddeford 04005 (15)
pollonio, Howard L., 22 White St., Rockland 04841 (7)
pplin, Hilton H., 6 Cumberland St., Brunswick 04011 (3)
anson, Albert, 39 Deering St., Portland 04101 (3)
chambault, Philip L., 346 Main St., Lewiston 04240 (1)
ali, Louis A., 29 Deering St., Portland 04101 (3)
herman, Edward G., 131 Chadwick St., Portland 04102 (3)
hley, Alta, 11 Weston St., Augusta 04330 (6)
ncoin, Peter B., 151 Franklin St., Rumford 04276 (9)
ngst, Melvin R., Morneault Building, Fort Kent 04743 (2)

balian, Leon, 645 Congress St., Portland 04101 (3)
bcock, Edward B., 431 State St., Bangor 04401 (10)
bcock, Harold S., Castine 04421 (5)
castow, Merle S., 22 Bramhall St., Portland 04102 (3)
chrach, Louis, 65 Baribeau Dr., Brunswick 04011 (3)
chulus, John M., 3 Breckan Rd., Brunswick 04011 (8)
con, Melvin, 122 Main St., Sanford 04073 (15)
ldini, Elio, 22 Bramhall St., Portland 04102 (3)
ldwin, Warren C., 42 Deering St., Portland 04101 (3)
ll, Franklin P., Bingham 04920 (12)
rker, Nathaniel B. T., 1 South St., Yarmouth 04096 (3)
rnard, John M. H., Doctors Park, 89 Hosp. St., Augusta 04330 (6)
rnes, Kirk K., Baribeau Dr., Brunswick 04011 (3)
rrett, Robert J., Jr., Cor. Union & James Sts., Bangor 04401 (10)
rron, Martin A., Jr., 37 Deering St., Portland 04101 (3)
rron, Richard E., Main St., Monmouth 04259 (6)
tes, James C., Eastport 04631 (14)
uman, Clair S., 159 Silver St., Waterville 04901 (6)
an, Achsa M., Star Route 22-282, Owl's Head 04854 (7)
an, H. Richard, 241 Main St., Norway 04268 (9)
aror, Robert A., Maine Medical Ct., Portland 04102 (3)
audet, Simon C., 25 Webster St., Lewiston 04240 (1)
ckerman, Stanley C., 175 Silver St., Waterville 04901 (6)
eaker, Vincent H., 85 Wood St., Lewiston 04240 (1)
egel, Paul M., 80 Golf St., Auburn 04210 (1)
liveau, Bertrand A., 56 Howe St., Lewiston 04240 (1)
lknap, Samuel L., Damariscotta 04543 (8)
lmont, Ralph S., 6 Washington St., Sanford 04073 (15)
nnet, DaCosta F., 4 Main St., Lubec 04652 (14)
nnet, Eben T., 49 Deering St., Portland 04101 (3)
rger, Steven, Station B, Ponghkeepsie, N. Y. 12602 (15)
ttle, Ronald A., 32 Federal St., Brunswick 04011 (3)
tts, Anthony, Maine Medical Ctr., Portland 04102 (3)
atnagar, Hemendra N., 67 Silver St., Waterville 04901 (6)
lwell, Robinson L., 31 Bramhall St., Portland 04102 (3)
nette, Germain A., 331 Main St., Saco 04072 (15)
choffberger, John M., Naples 04055 (3)
hop, Lloyd W., 211 Vaughan St., Portland 04102 (3)
rn, John C., Hampden Highlands 04445 (10)
ckburn, Nelson P., Bath Memorial Hosp., Bath 04530 (8)
ckwell, William M., Millinocket Com. Hosp., Millinocket 04462 (10)
isdell, Carl E., 47 Broadway, Bangor 04401 (10)
Blaisdell, Elton R., 233 Vaughan St., Portland 04102 (3)
Blaisdell, William B., Jr., 17 Broadway, Bangor 04401 (10)
Blinder Philip, 336 Mt. Hope Ave., Bangor 04401 (10)
Blumberg, Edward, 6316 Strickland Ave., Brooklyn, N. Y. 11234 (3)
Bolduc, Jean L., 173 Main St., Waterville 04901 (6)
Bonney, James H., 229 Vaughan St., Portland 04102 (3)
Boone, Storer W., 429 Main St., Presque Isle 04769 (2)
Bostwick, George W., Box 388, Newcastle 04553 (8)
Bourassa, Harvey J., 47 Elm St., Waterville 04901 (6)
Bouton, Dale C., Dexter 04930 (11)
Bousquet, Jean J., Maine Medical Ctr., Portland 04102 (3)
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Bowman, Peter W., Box C, Pownal 04069 (3)
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U.S. A.I.D., A.P.O. 271, New York, N. Y. 09271 (9)
Bradbury, Francis W., 16 E. Main St., Dover-Foxcroft 04426 (11)
Branch, Charles F., Central Maine Gen. Hosp., Lewiston 04240 (1)
Brann, Henry A., 31 Western Ave., Augusta 04330 (6)
Branson, Sidney R., 37 Main St., South Windham 04082 (3)
Bridges, Donald E., 336 Mt. Hope Ave., Bangor 04401 (10)
Brien, Maurice, 76 Pine St., Lewiston 04240 (1)
Briggs, Paul R., Hartland 04943 (12)
Briggs, Winton, 21 Swift St., Ft. Leonard Wood, Mo. 65473 (3)
Brinkman, Carl A., 50A Flaggy Meadow Rd., Gorham 04038 (3)
Brinkman, Harry, 47 Perham St., Farmington 04938 (4)
Brinkman, Paul A., Farmington 04938 (4)
Brito, Joseph S., 255 Hammond St., Bangor 04401 (10)
Broggi, Frank S., 18 Neal St., Portland 04102 (3)
Bromley, William C., Medical Ctr., Southwest Harbor 04679 (5)
Brouwer, Johan, 5 Beech St., Rockland 04841 (7)
Brown, Douglas H., 548 Shore Rd., Cape Elizabeth 04107 (3)
Brown, Eugene E., 57 Summit Ave., Bangor 04401 (10)
Brown, Lloyd, 186 State St., Bangor 04401 (10)
Brown, Stephen S., Mars Hill 04758 (2)
Brownlow, Bradley E., Blue Hill Mem. Hosp., Blue Hill 04614 (5)
Brownrigg, Leslie W., St. Stephen, N. B. (14)
Budd, William L., 32 Federal St., Brunswick 04011 (3)
Buker, Edson B., R.F.D. No. 3, Auburn 04210 (1)
Bull, Frank B., 5 Hasson St., Hallowell 04347 (6)
Bullington, Sunny J., 32 Federal St., Brunswick 04011 (3)
Bundy, Harvey C., Milo 04463 (11)
Bunker, Willard H., York Harbor 03911 (5)
Burden, Charles E., 1 North St., Bath 04530 (8)
Burke, John E., 5 High St., Newport 04953 (10)
Burke, Paul W., 5 High St., Newport 04953 (10)
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Burnham, Harold N., 130 Main St., Gorham 04038 (3)
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Carde, Albert M., 33 Elm St., Milo 04463 (11)
Carrier, John W., Central Maine Gen. Hosp., Lewiston 04240 (1)
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Castellanos, Jose, Augusta State Hosp., Augusta 04330 (6)
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Chapin, Milan A., 237 Turner St., Auburn 04210 (1)
Charest, Leandre R., 314 Alfred St., Biddeford 04005 (15)
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Chason, Sidney, 128 Broadway, Bangor 04401 (10)
Chasse, Richard L., 18 Park St., Waterville 04901 (6)
Chatterjee, Manu, Baribeau Dr., Brunswick 04011 (3)
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Clapp, Waldo A., 215 College St., Lewiston 04240 (1)
Clapperton, Gilbert, 300 Main St., Lewiston 04240 (1)
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Clark, Richard I., Freeport Medical Ctr., Freeport 04032 (3)
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Cobb, Stephen A., 34 Winter St., Sanford 04073 (15)
Coffin, Ernest L., Northeast Harbor 04662 (5)
Cohen, Abram I., Smith St., Harrison 04040 (3)
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Colley, Maynard B., 14 Main St., Farmington 04938 (4)
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Cuneo, Kenneth J., 31 Summer St., Kennebunk 04043 (15)
Cunningham, Alice N., 32 Federal St., Brunswick 04011 (3)
Curran, Edward L., 209 State St., Bangor 04401 (10)
Curtis, John B., 10 High St., Milo 04463 (11)
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Davies, Lloyd G., 78 Main St., Fryeburg 04037 (3)
Davis Ansel S., Springvale 04083 (15)
Davis, Earle M., 2 School St., Waterville 04901 (6)
Davis, Paul V., 94 Main St., Bridgton 04009 (3)
DeCosta, Donald A., Poland Spring 04274 (1)
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Doble, Miriam, Sugarloaf Mt., Kingfield 04947 (4)
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Dole, Richard R., 218 Main St., Waterville 04901 (6)
Donahue, Clement L., 22 Sweden St., Caribou 04736 (2)
Donahue, Gerald H., 4 Station St., Presque Isle 04769 (2)
Dooley, Francis M., 53 Deering St., Portland 04101 (3)
Dore, Clarence E., 2 School St., Waterville 04901 (6)
Dore, Kenneth E., 133 Main St., Fryeburg 04037 (3)
Dorfman, Irvin, Webber Hosp., Biddeford 04005 (15)
Dorogi, Louis V., Old Post Rd., Rt. 138, Bowdoinham 04008 (8)
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Douphinett, Otis J., 763 Congress St., Portland 04102 (3)
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Downing, J. Robert, 35 Summer St., Kennebunk 04043 (15)
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Drummond, S. Dunton, Bar Mills 04004 (15)
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Dyhrberg, Norman E. 323 Main St., Cumberland Mills 04021 (3)

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Earnhardt, Joseph B., 55 Stroudwater St., Westbrook 04092 (3)
Eastman, Charles W., 15 Millet St., Livermore Falls 04254 (4)
Eddy, Robert H., 5 Beech St., Rockland 04841 (7)
Eisberg, Harry B., 331 Main St., Saco 04072 (15)
Elsemore, Dexter E., 11 Main St., Dixfield 04224 (9)
Emanuel, Meyer, Veterans Adm., Togus 04330 (6)
Emerson, W. Merritt, 131 State St., Bangor 04401 (10)
Emery, Frederick C., 242 Cedar St., Bangor 04401 (10)
Endicott, Ruth E., Grasshopper Lane, Ogunquit 03907 (15)
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Ervin, Edmund N., 2 School St., Waterville 04901 (6)
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Fakhery, Behzad, 339 Webster St., Lewiston 04240 (3)
Fancher, Francois J., Grand Isle 04746 (2)
Fecley, J. Robert, 438 Garland St., Bangor 04401 (10)
Fergus, Andrew, 336 Mt. Hope Ave., Bangor 04401 (10)
Ferguson, Barbara, 80 Goff St., Auburn 04210 (1)
Ferguson, Franklin F., 22 Bramhall St., Portland 04102 (3)
Fichtner, Paul A., 781 High St., Bath 04530 (8)
Ficker, Robert F., Maine St., Kennebunkport 04046 (15)
Field, Richard L., Herrick Rd., Southwest Harbor 04679 (5)
Fife, James L., 65 Baribeau Dr., Brunswick 04011 (3)
Finks, Henry B., 73 Deering St., Portland 04101 (3)
Fiorica, Gaetano T., 12 Church St., Chisholm 04222 (4)
Fish, Nicholas, 235 State St., Portland 04101 (3)
Fisher, Dean H., State House, Augusta 04330 (6)
Fisher, Samson, 15 College Ave., Waterville 04901 (6)
Fishman, Louis N., 185 Webster St., Lewiston 04240 (1)
Flanders, Merton N., 1 High St., Lewiston 04240 (1)
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Fogg, C. Eugene, 35 Deering St., Portland 04101 (3)
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Fortier, Andre P., 68 Foss St., Biddeford 04005 (15)
Fortier, Paul J., 111 Webster St., Lewiston 04240 (1)
Fox, Francis H., 83 West St., Portland 04102 (3)
Freeman, William E., 107 Main St., Yarmouth 04096 (3)
French, Rowland B., 16 Water St., Eastport 04631 (14)
Frenette, Francis F., 628 Robin Rd., Leaksville, N. C. 28211 (2)
Frost, Harold M., Friendship 04547 (7)
Frost, Robert A., 93 Summer St., Auburn 04210 (1)
Fuller, Barbara L., 20 Chestnut St., Rockland 04841 (7)
Fuller, George G., 50 Union St., Ellsworth 04605 (5)

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Galen, Robert S., 6 Breckan Rd., Brunswick 04011 (3)
Garcia-Ray, Felix M., 14 Charles St., Milo 04463 (11)
Gashgai, Abdollah S., Livermore Falls 04254 (4)
Gates, Clifford W., 30 Flaggy Meadow Rd., Gorham 04038 (3)
Gauvreau, Horace L., 82 Pine St., Lewiston 04240 (1)
Gauvreau, Norman O., 78 Pine St., Lewiston 04240(1)
Geer, Charles R., 208 Vaughan St., Portland 04102 (3)
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Getchell, Ralph A., 14 Elmwood Rd., Cape Elizabeth 04107 (3)

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)bons, John F., 22 Bramhall St., Portland 04102 (3)
)erson, Raymond G., 156 A Academy St., Presque Isle 04769 (2)
ldings, Lane, Veterans Adm. Hos., Wilkes-Barre, Pa. 18703 (6)
ldings, Paul D., 31 Western Ave., Augusta 04330 (6)
sen, Joseph H., 34 Gilman St., Waterville 04901 (6)
guere, Eustache N., 90 Webster St., Lewiston 04240 (1)
man, Herbert C., 240 Penobscot Ave., Millinocket 04462 (10)
igras, Napoleon J., 6 East Chestnut St., Augusta 04330 (6)
ertz, Bernard, 131 Chadwick St., Portland 04102 (3)
ssmire, Charles R., 37 Deering St., Portland 04101 (3)
lsoe, John A., 7 Bramhall St., Portland 04102 (3)
luti, Richard J., 9 Deering St., Portland 04101 (3)
dman, Morris E., 185 Webster St., Lewiston 04240 (1)
)d, Philip G., 38 Deering St., Portland 04101 (3)
)dof, Irving I., Thayer Hospital, Waterville 04901 (6)
)drich, Blynn O., 165 Main St., Waterville 04901 (6)
)dwin, Ralph A., Sr., 56 Denison St., Auburn 04210 (1)
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mley, Eugene G., Market Square, Houlton 04730 (2)
ıld, George I., 79 Main St., Richmond 04357 (6)
tves, Robert A., Sunset Drive, Orono 04473 (10)
ty, Philip L., Blue Hill 04614 (5)
co, Edward A., 12 Pine St., Portland 04102 (3)
en, Ross W., 33 Court St., Auburn 04210 (1)
ene, John P., 19 Sabattus St., Lewiston 04240 (1)
ene, Merrill S. F., 466 Main St., Lewiston 04240 (1)
enlaw, William A., 129 Main St., Fairfield 04937 (12)
gory, Frederick J., So. Main St., Caribou 04736 (2)
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ıley, Daniel F., Box 250, Brunswick 04011 (3)
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dy, Edmund W., 134 U.S. Rt. 1, Falmouth 04105 (3)
dy, Henri, Dark Harbor, Islesboro 04848 (7)
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low, Edwin W., 177 Main St., Waterville 04901 (6)
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vey, Thomas G., 59 Mayo St., Caribou 04736 (2)
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vkins, Donald B., Atlantic Ave. and Sea St, Camden 04843 (7)
es, James C., 6 E. Chestnut St., Augusta 04330 (6)
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Laney, Richard P., 50 Water St., Skowhegan 04976 (12)
Langer, Ella, 2 Chapel St., Augusta 04330 (6)
Lansing, Peter F., 16 Macomber Ave., Augusta 04330 (6)
Lape, C. Philip, 7 Bramhall St., Portland 04102 (3)
Lapirow, Harry, 99 Main St., Kennebunk 04043 (15)
Lappin, John J., 171 State St., Portland 04101 (3)
Larochelle, Joseph R., 42 Bacon St., Biddeford 04005 (15)
Larrabee, Charles F., 48 Mt. Desert St., Bar Harbor 04609 (5)
Larson, Karl V., East Machias 04630 (14)
Lathbury, Vincent T., Medical Arts Building, Rockland 04841 (7)
Laughlin, K. Alexander, 201 State St., Portland 04101 (3)
Lawry, Oram R., Jr., 96 Limerock St., Rockland 04841 (7)
Leddy, Percy A., Main St., Seal Harbor 04675 (10)
Leigh, Kenneth E., Brixham Rd., York 03909 (15)
Leighton, Wilbur F., 192 State St., Portland 04101 (3)
Leiter, Laban W., 175 Vaughan St., Portland 04102 (3)
Leitman, Reuben, 188 Sabattus St., Lewiston 04240 (1)
Lepore, Anthony E., 128 Maine Ave., Gardiner 04345 (6)
Lesieur, Louis C., 255 Beach St., Saco 04072 (15)
Levy, Richard A., Maine Medical Ctr., Portland 04102 (3)
Libby, Harold E., 702 Main St., Westbrook 04092 (3)
Lichter, Horacio A., 54 Pine St., Lewiston 04240 (1)
Lidstone, Frederick B., 117 Goff St., Auburn 04210 (1)
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Lincoln, John R., 22 Bramhall St., Portland 04102 (3)
Lincourt, Armand S., 122 Main St., Sanford 04073 (15)
Llorente, Aldo F., 56 Baribeau Dr., Brunswick 04011 (3)
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Love, Robert B., 97 Main St., Gorham 04038 (3)
Lovely, David K., 46 Deering St., Portland 04101 (3)
Lutes, Chris A., 7 Bramhall St., Portland 04102 (3)
Lynn, Geraldine, 188 Russell St., Lewiston 04240 (1)

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Madigan, John B., Houlton 04730 (2)
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Magocsi, Alexander W., York 03909 (15)
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Marston, Paul C., Kezar Falls, 04047 (3)
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Martin, Joseph E., 35 Main St., Mexico 04257 (9)
Martin, Ralf, 131 Chadwick St., Portland 04102 (3)
Martin, Thomas A., 157 Pine St., Portland 04102 (3)
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Mazzone, Giovanni, 487 Stevens Ave., Portland 04103 (3)
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McAfee, Robert E., 18 Bramhall St., Portland 04102 (3)
McAllister, John W., 17 Elm St., Machias 04654 (14)
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McCrum, Philip H., 188 State St., Portland 04101 (3)
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McIntire, Barron F., Jr., 13 W. Elm St., Yarmouth 04096 (3)
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McLaughlin, Clarence R., 345 Water St., Gardiner 04345 (6)
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McManamy, Eugene P., 72 West St., Portland 04102 (3)
McMichael, Morton, 73 Deering St., Portland 04101 (3)
McNamara, Wesley C., 8 Lee St., Lincoln 04457 (10)
McQuillan, Arthur H., 177 Main St., Waterville 04901 (6)
McQuoid, Robert M., 39 Columbia St., Bangor 04401 (10)
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Miller, Clark F., 46 Madison St., Auburn 04210 (1)
Miller, Hudson R., 11 Turner St., Auburn 04210 (1)
Miller, Thor, 752 Main St., Westbrook 04092 (3)
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Morin, Harry F., 905 Middle St., Bath 04530 (8)
Morissette, Russell A., 185 Webster St., Lewiston 04240 (1)
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Morrison, Alvin A., 57 Deering St., Portland 04101 (3)
Morrison, Robert M., 148 State St., Portland 04101 (3)
Morse, Edward K., 22 White St., Rockland 04841 (7)
Moulton, Albert W., Sr., 180 State St., Portland 04101 (3)
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Moulton, Gardner N., 5 Grove St., Bangor 04401 (10)
Moulton, Marion K., West Newfield 04095 (15)
Moulton, Sumner E., 233 Vaughan St., Portland 04102 (3)
Munce, Richard T., 262 State St., Bangor 04401 (10)
Mundie, Perley J., 32 North St., Calais 04619 (14)
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Oceretko, Arkadij, 37 Court St., Bath 04530 (8)
O'Connell, George B., 11 Lisbon St., Lewiston 04240 (1)

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Donnell, Eugene E., 32 Deering St., Portland 04101 (3)
strich, Alfred, 25 Hartford St., Rumford 04276 (9)
ler, Robert L., Veterans Adm., Togus 04330 (6)
Kane, Francis R., 122 Penobscot Ave., Millinocket 04462 (10)
nsted, Burton L., 73 Deering St., Portland 04101 (3)
at, Mustafa V., St. George 04857 (7)
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borne, John R., Narrows Pond Rd., Winthrop 04364 (2)
her, Harold L., 131 Chadwick St., Portland 04102 (3)
ler, Jay K., 74 Birch St., Bangor 04401 (10)
Sullivan, James V. L., 376 Main St., Lewiston 04240 (1)
Sullivan, William B., 331 Main St., Saco 04072 (15)
nm, Alvin E., 148 State St., Portland 04101 (3)
ellette, Benoit, 77 Main St., Fort Kent 04743 (2)
ellette, Marcel D., 120 Main St., Sanford 04073 (15)

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lmer, Thomas H., Jr., 431 State St., Bangor 04401 (10)
rrot, Hadley, 431 State St., Bangor 04401 (10)
tane, Joseph M., 256 Alfred St., Biddeford 04005 (15)
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wle, Robert H., 8 Walcott Ave., Falmouth 04105 (3)
arson, John J., 100 So. Main St., Old Town 04468 (10)
ase, Horace B., Maine Coast Mem. Hosp., Ellsworth 04605 (5)
Idie, Harry M. K., Doctors Park, 89 Hosp. St., Augusta 04330 (6)
ha, Manuel G., 82 Maine Ave., Rumford 04276 (9)
ndleton, Arthur D., 3 Green St., Fort Fairfield 04742 (2)
moyer, Douglass C., 112 Vaughan St., Portland 04102 (3)
ita, Walter E., 316 Woodford St., Portland 04103 (3)
kins, Niles L., R.F.D. No. 1, Bowdoinham 04008 (3)
rault, Oscar W., 30 South St., Biddeford 04005 (15)
erlein, Walter R., Jr., 75 Main St., Springvale 04083 (15)
terson, Herman C., Chebeague Island 04017 (3)
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es, Philip, Maine St., Limestone 04750 (2)
tt, Anna, Beauchamp Rd., Rockport 04856 (7)
upton, Jay R., 283 Water St., Augusta 04330 (6)
gue, Jackson S., 529 Gilmore Ave., Trafford, Pa. 15085 (3)
iner, Irving J., 235 State St., Portland 04101 (3)
isner, Saul R., 143 Vaughan St., Portland 04102 (3)
ydefkis, Dimitri G., Augusta State Hosp., Augusta 04330 (6)
nerleau, Ovid F., 179 Main St., Waterville 04901 (6)
nelean, Rodolphe J. F., 27 Main St., Waterville 04901 (6)
ler, Harold A., State Hospital, Bangor 04401 (10)
e, W. Dean, 6 Pleasant St., Rangeley 04970 (4)
ter, Edward C., 489 State St., Bangor 04401 (10)
ter, Joseph E., 22 Bramhall St., Portland 04102 (3)
ts, Ronald S., Central Maine Gen. Hosp., Lewiston 04240 (1)
lin, Albert A., Cherry Hill Dr., Waterville 04901 (6)
lin, James E., 177 Main St., Waterville 04901 (6)
zell, Ralph C., Damariscotta 04543 (8)
tt, George L., 37 Lawrence St., Fairfield 04937 (4)
tt, Loring W., 177 Main St., Waterville 04901 (6)
e, Richard D., R.F.D. 2, Caribou 04736 (2)
ham, Fred J., Greenville Junction 04442 (11)
tor, Ray A., Garden Circle, Caribou 04736 (2)
tor, Thomas E., Boothbay Harbor 04538 (8)
dian, Paul O., 776 Main St., Westbrook 04092 (3)
dx, Harvey J., 185 Webster St., Lewiston 04240 (1)
vost, Helen C., 48 Green St., Augusta 04330 (6)
vost, Pierre E., 48 Green St., Augusta 04330 (6)
ington, William A., 276 State St., Bangor 04401 (10)

d, Carleton H., 219 Oak St., Lewiston 04240 (1)
do, Joseph J., 111 Webster St., Lewiston 04240 (1)
. Ferris S., 7 Bramhall St., Portland 04102 (3)
l, Seth H., 15 Church St., Belfast 04915 (13)
l, Howard L., 68 Water St., Skowhegan 04976 (12)
l, James W., 18 Main St., Farmington 04938 (4)
. John J., 59 So. Front St., Richmond 04357 (6)
es, Edward L., 179 Sabattus St., Lewiston 04240 (1)
es, Helene M., 179 Sabattus St., Lewiston 04240 (1)
ick, Edwin G., Box C, Pownal 04069 (3)
olds, Arthur P., 29 Second St., Presque Isle 04769 (2)
olds, John F., 216 Main St., Waterville 04901 (6)
olds, Ralph L., 216 Main St., Waterville 04901 (6)
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Richards, Lee W., Jr., 21 Western Ave., Augusta 04330 (6)
Rideout, Samuel, Green St., Fort Fairfield 04742 (2)
Ridlon, Joseph R., 58 South St., Gorham 04038 (3)
Ridlon, Magnus F., 431 State St., Bangor 04401 (10)
Robert, Roger J. P., 331 Main St., Saco 04072 (15)
Robertson, George J., 171 Harrison Ave., Boston, Mass. 02111 (6)
Robinson, Hugh P., 27 Deering St., Portland 04101 (3)
Rock, Daniel A., 477 Main St., Lewiston 04240 (1)
Rodriguez, Araminta M., 14 Charles St., Milo 04463 (11)
Rodriguez, Jose M., 109 Silver St., Waterville 04901 (6)
Rogers, Albert M., 157 Pine St., Portland 04102 (3)
Rohm, Walter, Augusta State Hosp., Augusta 04330 (6)
Root, John A., 22 White St., Rockland 04841 (7)
Rosenblatt, Stanley D., 480 Main St., Lewiston 04240 (1)
Ross, H. Danforth, 34 Winter St., Sanford 04073 (15)
Ross, Maurice, 372 Main St., Saco 04072 (15)
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Runyon, William N., Veterans Adm., Togus 04330 (6)
Russell, Daniel F. D., Leeds 04263 (1)
Russell, Robert F., Penobscot 04476 (5)
Russell, Theodore M., 20 Western Ave., Augusta 04330 (6)

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Samuelsen, Thomas W., 194 Main St., Lincoln 04457 (10)
Sanders, Stephen W., 120 Main St., Winthrop 04364 (6)
Sanfacon, Philip C., Main St., Van Buren 04785 (2)
Sanford, Theodore H., 185 Webster St., Lewiston 04240 (1)
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Shapiro, Morrill, 7 Bramhall St., Portland 04102 (3)
Shaw, G. Patrick, 357 Elm St., Biddeford 04005 (15)
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Shields, Daniel R., 369 Main St., Lewiston 04240 (1)
Shields, Thomas F., 300 Pine St., Lewiston 04240 (1)
Shubert, Alice J., 317 State St., Bangor 04401 (10)
Shubert, William M., 317 State St., Bangor 04401 (10)
Shurman, Hans, 10 Spring St., Dexter 04930 (10)
Sidwell-Thompson, Doris M.,
R.F.D. Whittier Rd., W. Ossipee, N. H. 03890 (3)
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Smith, Kenneth E., Veterans Adm., Togus 04330 (6)
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Somerville, Wallace B., Mars Hill 04758 (2)
Sommerfeld, Kurt A., Veterans Adm., Togus 04330 (6)
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Striar, Ronald R., 94 Essex St., Bangor 04401 (10)
Strickland, Marian L., Easy St., Canaan 04924 (12)
Stroud, Geoffrey A., 65 Baribeau Dr., Brunswick 04011 (3)
Strout, Warren G., 205 French St., Bangor 04401 (10)
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Tetreau, William J., 144 Spring St., Portland 04101 (3)
Thacher, Henry C., 117 Goff St., Auburn 04210 (1)
Thaxter, Langdon T., Cumberland Foreside, Portland 04110 (3)
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Tibbets, Otis B., 181 Gamage Ave., Auburn 04210 (1)
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Turville, Charles S., Box 187, Alfred 04002 (15)
Twadelle, Frank W., 5 High St., Van Buren 04785 (2)
Tyson, Dudley B., 91 Grove St., Bangor 04401 (10)

Urjanis, Janis, Box C, Pownal 04069 (3)

Vachon, Robert D., 34 Winter St., Sanford 04073 (15)
Vanadzin, Boris A.,
Rockland County Medical Dept., New City, N. Y. 10956 (3)
Van Deventer, Wilhelm H. J.,
R.F.D. 1, Mere Point Rd., Brunswick 04011 (3)
Van Lonkhuyzen, Maurice, 131 State St., Portland 04101 (3)
Veilleux, Lucien F., 30 Elm St., Waterville 04901 (6)
Vickers, Martyn A., 268 State St., Bangor 04401 (10)
Viger, Leopold A., 10 Amherst St., Biddeford 04005 (15)
Viles, Wallace E., Turner 04282 (1)
Vydas, Joseph, Bangor State Hosp., Bangor 04401 (10)

Wadsworth, Richard C., 189 State St., Bangor 04401 (10)
Wagner, Samuel L., 2 Holmes St., Winterport 04496 (10)
Wakefield, Robert D., St. Mary's Hosp., Lewiston 04240 (1)
Walker, George R., 336 Mt. Hope Ave., Bangor 04401 (10)
Ward, John V., 131 State St., Portland 04101 (3)
Ward, William W., Box 804, Rockland 04841 (7)
Wasgatt, Wesley N., 41 Talbot Ave., Rockland 04841 (7)
Waterman, Richard, Waldoboro 04572 (7)
Weatherbee, George B., Main St., Hampden Highlands 04445 (10)
Weaver, Michael L., 36 Federal St., Brunswick 04011 (3)
Webber, Isaac M., 29 Deering St., Portland 04101 (3)
Webber, John R., 6 Northport Ave., Belfast 04915 (13)
Webber, Merlon A., 33 Lancey St., Pittsfield 04967 (12)
Webber, Wedgwood P., 460 Main St., Lewiston 04240 (1)
Weisz, Hans, 17 Sunrise Ter., Orono 04473 (10)
Wellington, J. Foster, 396 Brighton Ave., Portland 04102 (3)
Weymouth, Currier C., Eastmont Square, Farmington 04938 (4)
White, Henry O., 22 White St., Rockland 04841 (7)
White, Houghton M., 56 Baribeau Dr., Brunswick 04011 (3)
White, Leland M., 18 Pleasant St., Caribou 04736 (2)
White, William J., 1 Mitchell Rd., South Portland 04106 (3)
Whitney, Byron V., 280 State St., Bangor 04401 (10)
Whitney, Philip G., 10 Amherst St., Biddeford 04005 (15)
Whitney, Ray L., Cape Porpoise 04014 (15)
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Whitworth, John E., 336 Mt. Hope Ave., Bangor 04401 (10)
Wight, Donald G., 30 Mitchell Rd., South Portland 04106 (3)
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Willard, Harold N., Thayer Hospital, Waterville 04901 (6)
Williams, Edward P., 72 Main St., Houlton 04730 (2)
Williams, James A., 39 Pleasant St., Mechanic Falls 04256 (1)
Williams, Thomas W., 22 White St., Rockland 04841 (7)
Williamson, Elizabeth E., Blue Hill 04614 (5)
Williamson, Russell G., Blue Hill Mem. Hosp., Blue Hill 04614 (5)
Wilson, G. Ivan, 40 Court St., Houlton 04730 (2)
Wilson, Harry M., 944 Middle St., Bath 04530 (8)
Wilson, Robert D., Mt. Desert Island Hosp., Bar Harbor 04609 (5)
Wilson, Robert W., Veterans Adm., Togus 04330 (6)
Winchenbach, Francis A., 910 Washington St., Bath 04530 (8)
Winkelbauer, Rudolf G., Baribeau Dr., Brunswick 04011 (3)
Wolfahrt, Eugene P., 258 Main St., Saco 04072 (15)
Wood, George W., III, 156 North Main St., Brewer 04412 (10)
Woodcock, Allan, 35 Second St., Bangor 04401 (10)
Woodcock, John A., 35 Second St., Bangor 04401 (10)
Woodman, Arthur B., 15 Johnson Rd., Falmouth Foreside 04105 (3)
Worthing, Verla E., Box A., Thomaston 04861 (7)
Wyman, David S., 233 Vaughan St., Portland 04102 (3)

Yeon, Hyung J.,
Station A, Harlem Valley State Hosp., Wingdale, N. Y. 12594 (1)
York, Elihu (LCDR)
MC USN, USS Essex (CVS-9), FPO, New York, N. Y. 09501 (
Young, E. Stanley, Poland Spring 04274 (1)
Young, John, Paradise St., Bethel 04217 (9)

Zanca, Ralph, 86 Pine St., Lewiston 04240 (1)
Zbyszycki, Tadeo, 39 High St., Skowhegan 04976 (12)
Zeller, Alan W., Main St., Newcastle 04553 (8)
Zikel, Herbert M., High St., Wilton 04294 (1)
Zolov, Benjamin, 296 Congress St., Portland 04101 (3)

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*Delbert M. Stewart, M.D., South Paris	1929-1930
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*Robert W. Belknap, M.D., Damariscotta	June-August 1954 (Died in Office)
*William F. Mahaney, M.D., Saco	1954-1955
Martyn A. Vickers, M.D., Bangor	1955-1956
*Armand Albert, M.D., Van Buren	1956-1957
Francis A. Winchenbach, M.D., Bath	1957-1958
Eugene E. O'Donnell, M.D., Portland	1958-1959
Allan Woodcock, M.D., Bangor	1959-1960
*Wilson H. McWethy, M.D., Augusta	June 1960-February 1961 (Died in Office)
Carl E. Richards, M.D., Sanford	February 1961-June 1961
James A. MacDougall, M.D., Rumford	1961-1962
*Ralph C. Stuart, M.D., Guilford	1962-1963
Ernest W. Stein, M.D., Pittsfield	1963-1964
Thomas A. Martin, M.D., Portland	1964-1965
John F. Dougherty, M.D., Bath	1965-1966

* Deceased